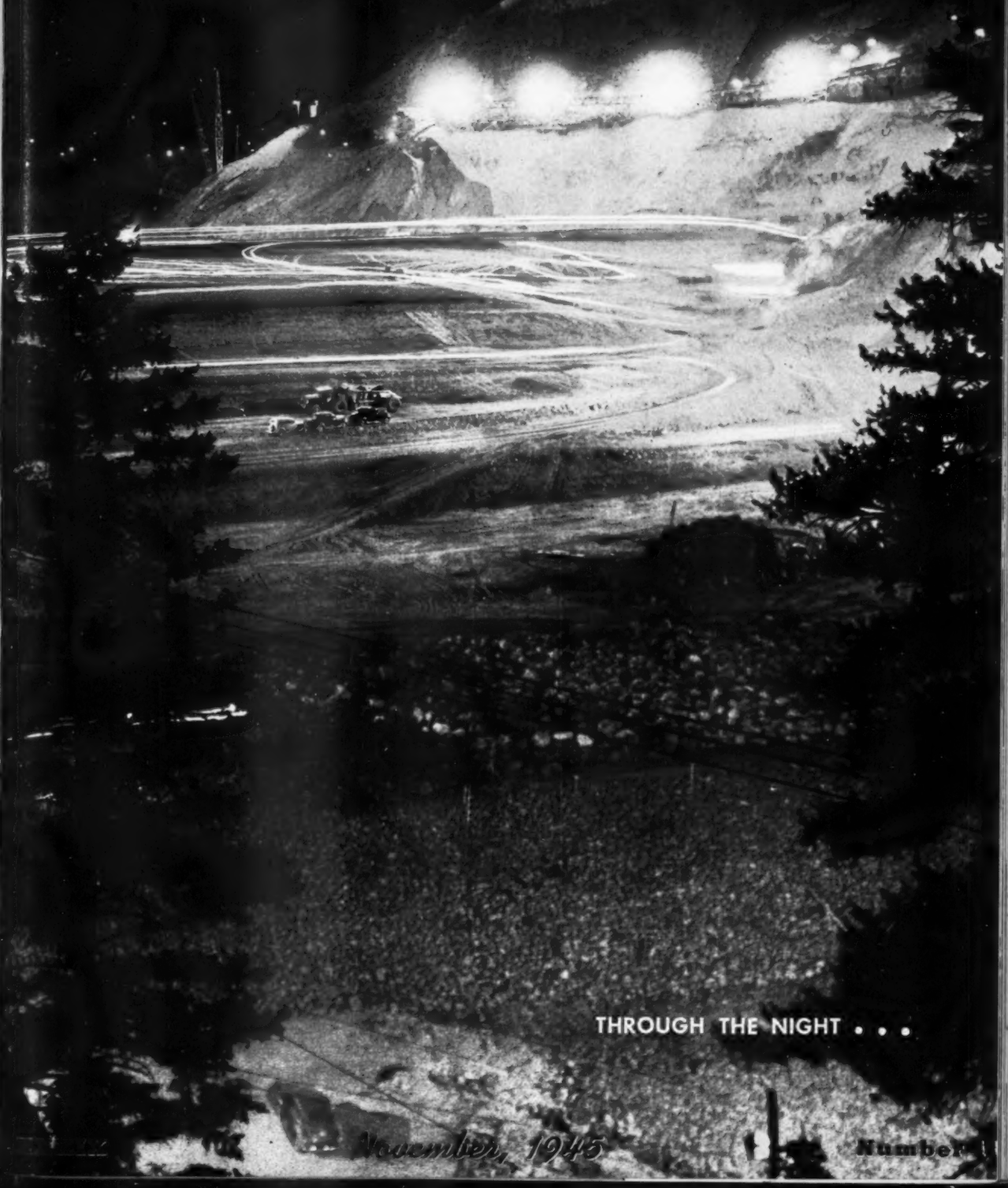
EXCAVATING ENGINEER

FOUNDED 1905



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November, 1945 Number

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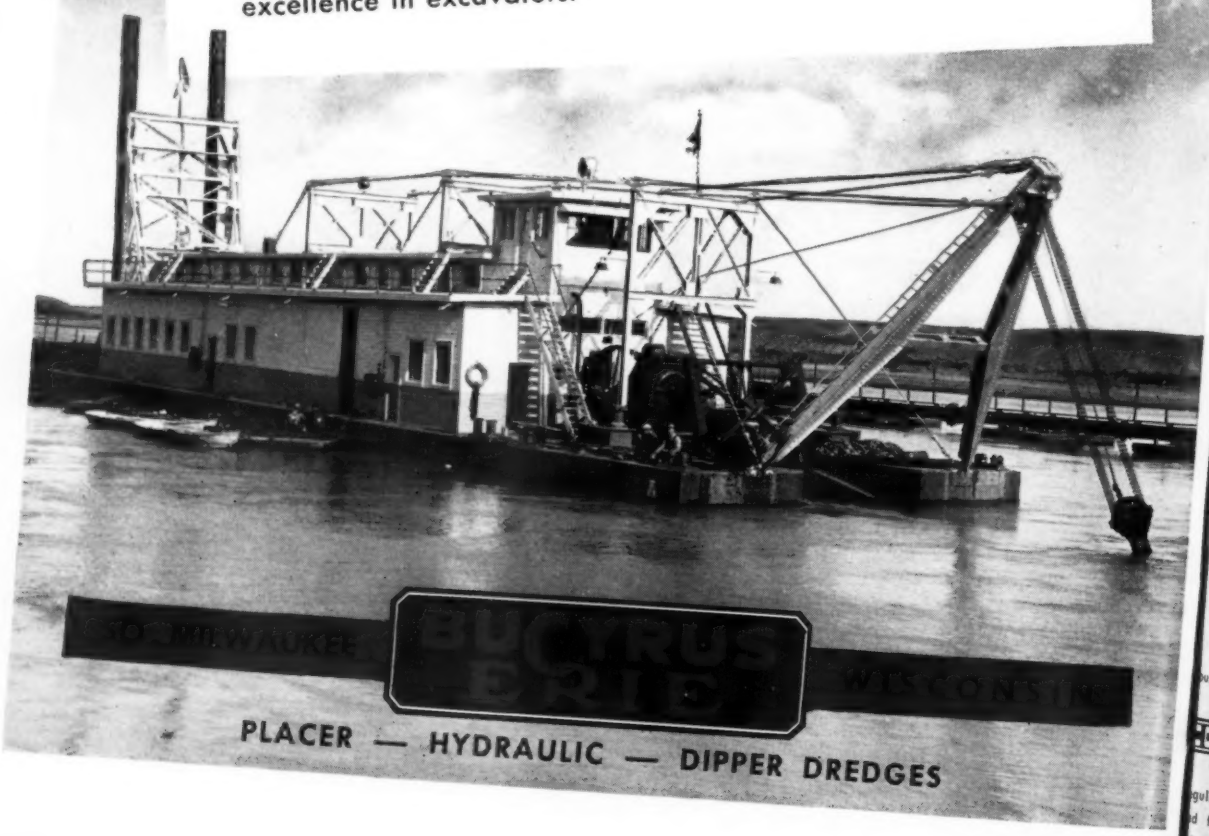

SOUTH MILWAUKEE BUCYRUS-ERIE WISCONSIN

PLACER — HYDRAULIC — DIPPER DREDGES

EXCAVATING ENGINEER

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can be applied to the worn surfaces and edges of steel, malleable and cast-iron. The weld is a chromium-carbon steel with high hardness which gives excellent wear resistance. This electrode performs equally well with AC or DC welding machines.

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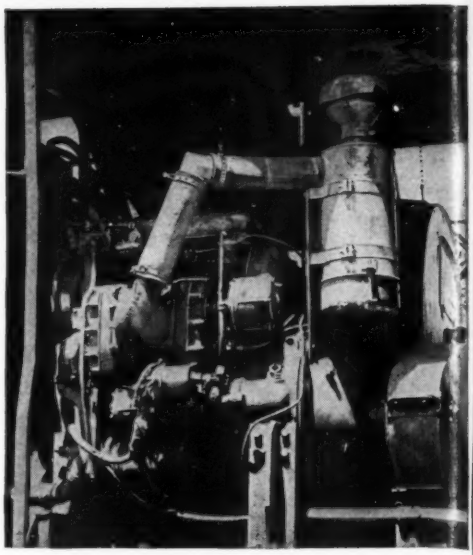

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Remember—no matter what grade of Bethlehem rope you buy, you can get it in the *relaxed* Form-Set construction.

When you think WIRE ROPE

. . . think BETHLEHEM

Philadelphia Gets a New Airport

• Bucyrus-Erie 1½-cu. yd., Lorain 1½-cu. yd., and Bucyrus-Erie ¾-cu. yd. shovels cutting away a bank.

James D. Morrissey of Philadelphia completes $2,000,000 Northeast Airport in Philadelphia in 90-day contract time in spite of problems caused by water, bog, heavily wooded areas, and heavy clay for runways that became plastic when wet. Contractor also confronted with 58,000 cu. yds. of mica schist excavation that involved blasting.

By LEONARD MARTIN FOX

IN SPITE OF A cloudburst that completely inundated the scene of operations, three underground springs that formed a bog of a large part of the area, a creek that flowed through the center of the proposed airport, and a field of rock later excavated to the amount of 58,500 cu. yds., James D. Morrissey of Philadelphia, Pa., completed the new $2,000,000 Northeast Airport in Philadelphia in the time allotted for the job.

Located in the northeast section of the corporate limits of the City of Philadelphia, the airport was originally planned as an interceptor base in the second line of defense against invasion. The rapid progress of the war, however, nullified the necessity for an interceptor base and plans for the construction of the airport were pigeon-holed. In 1944, the Civil Aeronautics Authority banned the use of Philadelphia's Southwest Airport for public safety, and Philadelphia, the country's third largest city, was left in the incongruous position of being without air contact with the rest of the world. To alleviate this condition, the original plans for the Northeast Airport were revived and the completion of the new airport rushed.

The site of the airport was in general composed of a layer of heavy clay, averaging five feet in depth, with underlying layers of heavy clay and mica schist. Layers of gray rock flour were found near the surface in many instances. Except for small areas in rock cut, runways were constructed on the heavy clay. This material, together with the underlying layers of rock flour, became very plastic when wet, and caused difficulty during runway construction.

The work consisted of the construction of an airfield, designed for four runways, each 5,000 feet long, with necessary taxiways. The principal items of work were clearing and grubbing, grading, drainage, paving and seeding.

The area comprising the new field contained 521 acres and consisted of truck farms, creek valleys, wooded areas, and residences with surrounding ground.

In clearing the site for construction, the greatest difficulty was furnished by the presence of the thickly wooded areas. Fully 100 acres were wooded, with an average of 200 trees on each acre of ground. Bulldozers were used to fell the trees. A Bucyrus-Erie 19-B ¾-cu. yd. clamshell and Koehring 301 ¾-cu. yd. clamshell were used in cleaning out stumps after the trees were cut down. They were placed in piles, coated with fuel oil and burned. Extreme care was taken before, during and after the trees were burned to prevent fire damage to equipment and property.

Before stripping could begin, it was necessary to eliminate the bog formed over a large part of the runway area by three underground springs. Two drainage ditches were dug, each about ¾ of a mile long, with an average depth of eight feet and 12 foot bottoms. Outfall of both ditches was the creek which was diverted from its original position bisecting the proposed runway area to the extreme side of the airport proper. Ditching operations were carried out with a Buckeye Traction Ditcher and a Bucyrus-Erie 20-B with a back hoe attachment. Permanent drainage facilities were provided by loading ditches with stone. One spring drain took 114 tons of gravel.

DIVERTING THE CREEK

In diverting the creek it was necessary to construct a cut a mile long, 15 feet wide and ten feet deep. Caterpillar D-8 tractors and LeTourneau scrapers were used to finish the bed and the slopes of the cut. When the cut was complete but for the last section, the creek was dammed off. When the last section was complete, the dam was released. Original site of the creek was filled with excess material stripped from other sections of the construction site.

Five LeTourneau scrapers, one 10-

cu. yd. and four 14-cu. yd., drawn by Caterpillar 96 h.p. diesel tractors were used for stripping topsoil, on short hauls not exceeding 1000 yards. This was stockpiled and later spread on 160 acres of landing strips and intermediate areas. On longer hauls, ranging up to 3000 feet or more, trucks loaded by shovels and elevating graders delivered material to the fills.

Airport grades were planned for economical balancing of cuts and fills. Hilltops were cut down eight to 15 feet and valleys were filled to maximum depths of 24 feet. Maximum grade on the completed 3.43 miles of landing strips is less than 0.75 per cent.

Fill material, spread in specified six to eight-inch loose layers was compacted with four tractor-drawn Blaw-Knox dual sheepsfoot tamping rollers, operating as separate units. Eight diesel tractors, five Caterpillars and three Cletracs were equipped with bulldozers for leveling fill; the tractors also performed other services, such as pulling the sheepsfoot rollers. Three motor patrols, two Austin-Westerns and one Caterpillar, worked on fills and on subgrade for the 500 foot-wide landing strips, finished to one inch tolerance.

As part of the grading contracts, two natural stream channels in the area were converted to reinforced concrete pipe sewers to provide the trunk lines for the airport drainage system.

TRUCKS AND SHOVELS

From 40 to 55 trucks equipped with 3 cu. yd. to 10 cu. yd. bodies were required to serve the seven power shovels of ¾ to 1¾ cu. yd. capacity on the job. The shovel equipment included three Bucyrus-Eries (one 1¾ and two ¾ cu. yd.), three Lorains (1 cu. yd., 1¼ cu. yd., 1½ cu. yd.) and one Lima (¾ cu. yd.). During the first 50 days of the 90-day contract period, most of the long haul material was loaded by six of the power shovels,

• Top: Stumps from the wooded area are cleaned out by a Bucyrus-Erie ⅜-cu. yd. shovel. Below: Caterpillar D-8 tractors pull LeTourneau scrapers pushed by D-8s.

• Top: Austin-Western elevating grader pulled by Caterpillar D-8 tractor loading 5-ton trucks. A fleet of from 50 to 60 trucks was in operation every day. Below: Topsoil is loaded into trucks by Lorain and Bucyrus-Erie 1½-cu. yd. shovels. Bulldozer levels area being used by hauling trucks.

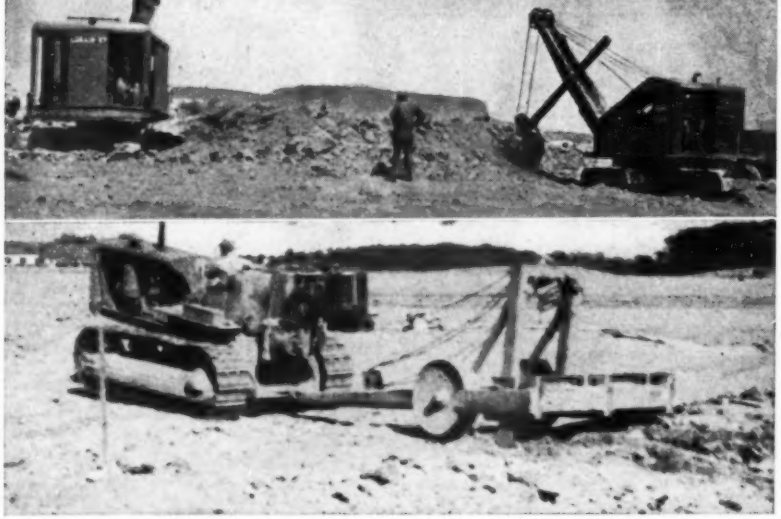
• **Left: One of the four Cleveland pneumatic drills used to drill eight-foot holes for blasting mica schist. Above: Top two feet of mica schist was broken up with rooter and loaded by scrapers before remainder was drilled and blasted.**

supplemented by an Austin-Western elevating grader with an engine-driven 48-inch belt on a 28-foot carrier. The Bucyrus-Erie 1¾ cu. yd. shovel, to which extensive repairs had to be made after it had been purchased and shipped to the job, went into action in the final spurt to complete the grading within the contract limit, as also did a new Caterpillar elevating grader with a 48-inch self-powered belt on a 32-foot carrier. When these additional units started to work, the truck fleet had to be greatly enlarged to take the increased output. Final figures showed that 1,215,853 cu. yds. of material had been excavated during construction.

Considerably more than half of the original truck complement was drawn from the contractor's own fleet of 25 units, made up of 23 Sterlings (4½ to 10 cu. yd.) and two Macks (8 to 10 cu. yd.). Additional rented trucks comprised Diamond Ts, Fords and Internationals, 3 to 5 cu. yd. capacity. For part of the time a Heil 12 cu. yd. hydraulic control wheel scraper drawn by a Walter pneumatic-tired Diesel tractor provided added capacity on long haul earthmoving. This unit could travel 25 m.p.h. on good haul roads.

In the first 50 days on the job, lack of shovel operators and truck drivers restricted four of the shovels to one ten-hour shift a day. Only the 1½-cu. yd. Lorain and one ¾-cu. yd. Lima

• **Below: Lorain 1-cu. yd. and Bucyrus-Erie ¾-cu. yd. shovels on rock excavation. Bottom: Caterpillar D-8 tractor with LeTourneau rooter preparing ground for shovel digging.**



were able to operate on two eight-hour shifts. Tractor skinners were more plentiful, and the scrapers worked a double shift of 16 hours per day. Three skid-mounted floodlight towers, two equipped with 5,000 watt plants, a Kohler and a Master MG-5, and one with a Master MG-4, 4,000 watt plant furnished light after dark. Operating on the reduced schedule necessitated by the operator shortage, the outfit moved 15,000 to 22,000 cu. yds. per day, and completed well over half of the grading contract. With the addition of equipment and manpower, daily yardage jumped considerably and the contract was fulfilled well within the 90-day time limit although there was no penalty involved in the time factor of the contract.

MICA SCHIST EXCAVATION

Mica schist to a total amount of 58,500 cu. yds. had to be removed in the course of excavation. The top two feet of the rock were broken up by the rooter for scraper loading but the remainder had to be drilled and blasted. Using four Cleveland pneumatic hammer drills and Timken 3-inch and 3½-inch detachable bits, workmen drilled about 65 verticle eight-foot holes in ten hours. A truck-mounted Schramm 210 cfm compressor driven by a Caterpillar 50 h.p. diesel engine, supplied air to two drills. Air for the operation of the other two drills was furnished by another Schramm and a Worthington compressor. Holes were drilled on ten-foot centers in each direction and each hole was loaded with about ten sticks of Hercules 40 per cent gelatin dynamite to break rock to a seven-foot depth, yielding about five cu. yds. of blasted material per pound of explosive. Holes were blasted in series of eight and blasting operations were carried on every morning. To provide an increased margin of safety no explosives were stored on the scene of operations. Holes were drilled after blasting operations for the day were concluded.

Covering an area nearly a mile

square on what was rolling farmland, partly wooded, the airport conforms to class four requirements of the Civil Aeronautics Administration. Under the grading contract, the field was graded for four 500-foot landing strips, 4,200 to 5,200 feet long. A separate paving contract, on which work was started while grading was still in progress, provided 150 ft. paved runways on two of the landing strips with the auxiliary taxiways paved 50 feet wide.

When cut and fill on runways and other areas to be paved was completed, gravel was laid in a six-inch layer over the sub-grade and on top of this an eight-inch layer of ballast of 1½-inch stone. Both primary layers were then tightened up with H E 1 Asphalt. Adnun blacktop paving machines completed the operations by spreading bituminous concrete topping. Buffalo-Springfield and Hercules rollers rolled the paving to the required tolerance and finish. Over two miles of runways and taxiways were paved to complete the airport.

DRAINAGE

Runoff from the paved areas is delivered into the main sewers at manhole junctions from buried edge drain pipe paralleling the two sides of each runway and one side of the taxiways. Surface water on the pavement flows into a shallow, depressed gutter, eight feet from the edge of the pavement, and passes into the collecting drain through inlets spaced about 200 feet apart, on the gutter line. This drainage feature was developed by the Philadelphia District office of the Corps of Engineers and is extensively applied to airports in the district to prevent surface waters from eroding and softening the berm at the edge of the pavement.

Paved runways on the airport have a roof crown with a straight slope of ⅛-inch per foot from the center line to each gutter. The bottom of the gutter is two and one-half inches below the edge of the pavement, and the outer eight feet of the paved surface is pitched on a straight slope from the edge to the gutter line.

Inlet surface drainage feeds into the edge drain either through manholes spaced 400 feet apart, or through direct connections into the larger pipe at intermediate 200-ft. locations. Subsurface drainage from under the pavement is trapped into the edge drains through bleeders of pervious material installed at manholes and intermediate 200-ft. intervals. Ground-water collected by the bleeders passes into the drain through porous concrete pipes or through the open joints of vitrified clay or concrete pipe laid with half-sealed joints. Poroswall concrete pipe was used in sizes up to and including 21-inch diameter, the largest size in which it was available, and the open joint construction was used only at the few places where 24-inch pipe was required. Six three-ft. lengths of pipe were laid at each bleeder, three on each side of a manhole and six in line at the intermediate location. For the porous pipe, the specifications required a minimum permeability of two gallons per minute per inch of pipe diameter per foot of length. A total of 5.39 miles of drains were laid during the course of construction.

• Left to right: R. Edge, safety engineer; Charles Bott, supt. of maintenance; Steve Downey, resident engineer; Lt. Baxter, project chief; James Armour, company engineer, and Frank Pingatore, project superintendent.

Colonel F. F. Freck is district engineer in charge of all work for the Corps of Engineers, U. S. Army, in the Philadelphia District, and L. D. Shuman is chief of operations divisions. The airport described in this article was constructed under the immediate direction of S. A. Downey, resident engineer.

James D. Morrissey, Philadelphia, was in active charge of the work on his contracts. Excavation and grading were under the general direction of Frank Pingitore, superintendent, with Irvin Niessen in charge of the second shift. James Armor was in charge of engineering, and Charles Bott was general superintendent.

• Left: Bulldozer maintains level for Bucyrus-Erie ¾-cu. yd. shovel laoding out an eight-foot bank of dirt. Right: Cletrac-equipped bulldozer cleans up around Lorain 1½-cu. yd. shovel.

Doubling Provo River Irrigation

J. B. & R. E. Walker, Inc. of Salt Lake City finishing four-job contract of modernizing Provo Reservoir Canal in Utah, a unit of one of oldest irrigation systems in U. S., by replacing wood stave pipes with concrete siphons which will enable system to more than double its capacity.

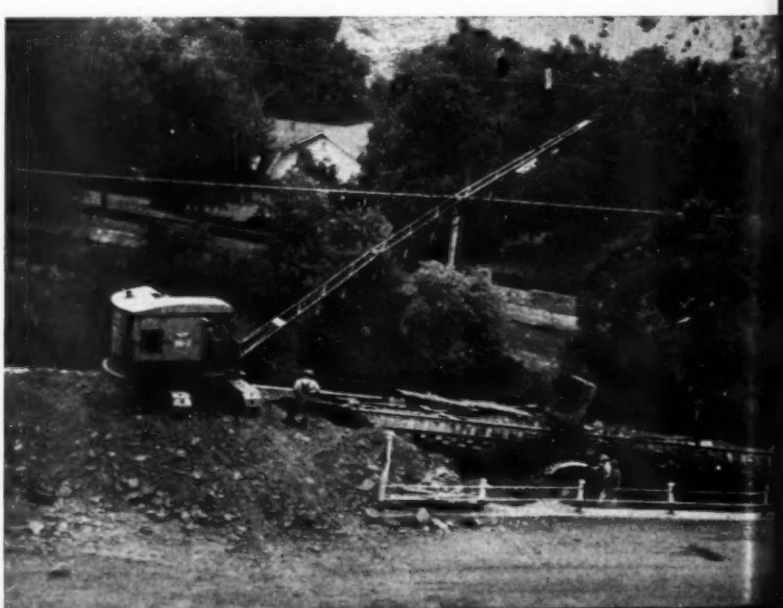
By L. H. HOUCK

THE PROVO RIVER project in Utah, under the jurisdiction of the Bureau of Reclamation, Department of the Interior, is one of the oldest irrigation projects in the United States. Mormon pioneers started trickles of water flowing through wooden stave pipes. Since then the problem has been to increase the flow each year and to conserve the water so there will be more to be sent to the farms.

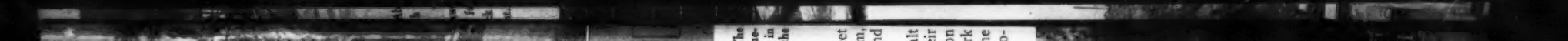
The Provo River project fits in with the Deer Creek dam project started in 1938. This completed dam is an earth-filled structure faced with rock, or rock compacted walls. A substructure for a powerhouse is completed but no machinery has been installed. In building the Deer Creek dam, which provides a water reservoir storing 155,000 acre-feet, it was necessary to relocate 11 miles of automobile highway and 10½ miles of railroad track. There is a connecting canal from the Weber River to the Provo River to assist in filling the reservoir. Completion of all the projects included in the Deer Creek dam will give a flow of 1000 second feet in the Provo River, below the dam, as compared to a flow of 210 second feet in 1929.

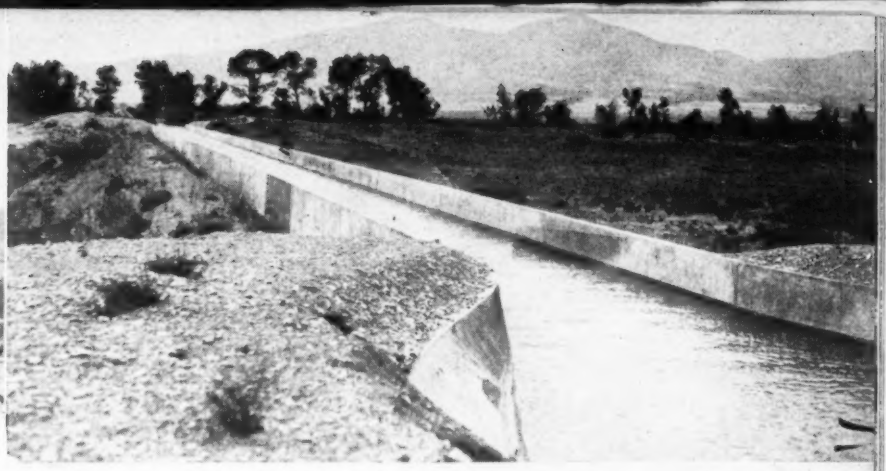
J. B. & R. E. Walker, Inc., of Salt Lake City are now finishing up their contract which included construction of the Olmsted, American Fork Creek, and Dry Creek siphons and the Highland Draw flume, all of the Pro-

• Entrance to Provo Canyon. The Provo Canyon section of the aqueduct lies in the left and winds in the letter "S" shape down from the mountains.

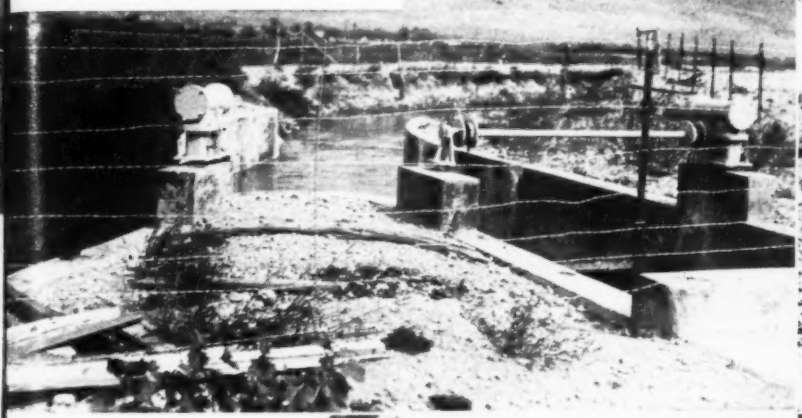


• Bucyrus-Erie ¾-cu. yd. dragline backfills siphon under tracks of Denver and Rio Grande Railroad tracks.



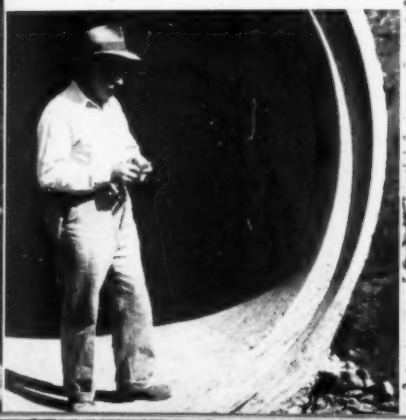


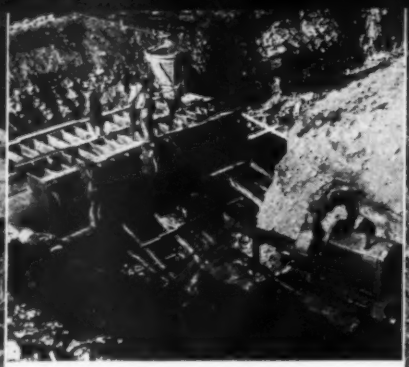
Above: Mobile automatic concrete plant
h 60-ton hopper has a capacity of 1-cu.
every 40 seconds. Right: Highland
w flume is an open flume 440 ft. long,
ft. wide with six-ft. walls six inches
k built on a 12-ft. compacted embank-
t.



• Left: American Fork Creek siphon transition and check. Below: American Fork Creek siphon wasteway.

• Left: Olmsted siphon Provo River crossing. Bucyrus-Erie dragline in background and Denver and Rio Grande Railroad bridge on right. Below: J. B. Walker checks for leakage in completed section and finds he is half under allowable amount in all sections including barrels under 20 ft. of water. Upper right: R. E. Walker (left) and Bill Jacobson, general foreman. Lower Right: Concrete siphon replaces old wooden stave line on the right.





• Left: P&H with 55-ft. boom and 1-cu. yd. bucket swings concrete from Smith 6-cu. yd. transit mixer mounted on six-wheel diesel truck to form for barrel. Above: Pumps in foreground run day and night to keep water down. Right: Inside section of wood concrete form faced with sheet metal.

vo Reservoir Canal, Deer Creek Division, Provo River project, Utah. The entire project consisting of four sections in one job is classed as a canal enlargement and is 6,400 ft. long and contains 7,400 cu. yds. of concrete. Two of the four projects, the Highland Draw flume and the American Fork Creek siphon are completed and the Olmsted siphon is nearing completion. Most of the work is located near the towns of Provo and American Fork, Utah.

When three concrete siphons now under construction are completed the water flow in the Provo Reservoir Canal will be increased from 220 feet per second to 550 feet per second and the ancient wooden stave conduits, now past repairing, will be abandoned.

J. B. & R. E. Walker, Inc., is a well-known construction firm of Salt Lake City, owned, operated and managed by two brothers, J. B. and R. E. Walker. In 1941 the company had the grading and excavating contract for the shell-loading plant at Ogden, and later several airport jobs, housing, waterworks and paving contracts. They operate throughout the western territory.

Some of the difficulties encountered on the Provo Project may be surmised when it is known that the concrete siphon pipe, eight feet in diameter, with 11-inch walls, went under the Provo River twice, over it once, crossed two other canals and crossed under the tracks of the Denver and Rio Grande Railroad.

The Highland Draw flume, made of reinforced concrete, is 495 feet long, 14 feet wide and has six-inch sidewalls six feet high. Most of it was built on a 12-ft. high compacted embankment. This flume was poured in 32 ft. sections and each section was provided with rubber water stops and cork expansion joints. Forms were made in position after the fill was completed and each end was excavated to grade. A Bucyrus-Erie 20-B ¾-cu. yd. dragline and a P. & H. dragline were used on this part of the job. The P. & H. was equipped with a 1-cu. yd. concrete bucket and conveyed the concrete from mixer trucks to forms. Concrete was hauled from a near-by manual concrete plant with a 60-ton hopper which was built in Salt Lake City.

The Dry Creek siphon is an eight-ft. diameter pipe, composed of 25-ft. monolithic concrete barrels. It replaced two 48-inch wood stave pipe lines.

Since the ends of the job were at least ten miles apart, J. B. Walker planned to set up an automatic concrete plant about the center and haul both ways, but this would have required more mixer trucks, tires and gasoline. The WPB allowed priority for the purchase of one automatic concrete plant and in addition the Walkers built the manual plant. The more efficient automatic central plant had to give way to war emergencies.

• Bucyrus-Erie dragline with ¾-cu. yd. bucket backfilling.

The 60-ton hopper capacity Noble automatic plant was located at the mouth of Provo Canyon where it is producing about one cu. yd. of mixed concrete every 40 seconds for pouring the 25-ft. long barrels for the Olmsted siphon.

Construction of the three siphons is similar with the exception of the Olmsted siphon which contains many more natural difficulties than the others. Excavation for the Olmsted siphon is in rocky and caving creek bottom structure, permeated with water. Much of the digging is done by the Bucyrus-Erie 20-B dragline with a 45-ft. boom and ¾-cu. yd. bucket and a leased Osgood dragline with a 45-ft. boom and a 1½-cu. yd. Page bucket. The Bucyrus-Erie also has shovel and backhoe front ends. Another excavator, a P. & H. with a 55-ft. boom is used to pour concrete, using a one-yard bottom valve bucket. An accordion chute attached to the outlet helps prevent a greater than four-ft. drop of concrete, according to specifications.

The excavation on the project, totaling about 100,000 cu. yds., cannot be carried far ahead of the concrete forms. The procedure essentially consists of a dragline working on excavation about two forms ahead of the pouring. The machine then returns back of the pouring crew and partly backfills and completes other chores. Sometimes material has to come from borrow pits and at other times the dragline loads fill to dump trucks. Between loading trucks it backfills on the siphon.

Two major problems confronting the contractor were to obtain minimum leakage in the concrete barrels

• Osgood dragline with 45-ft. boom and 1½-cu. yd. bucket, leased for this project, backfills and loads dump trucks.

and to keep the water pumped out of the excavated trench.

Dragline equipment was used to temporarily divert the flow of streams until the sections of concrete pipe were laid and then to revert the streams to their original beds.

Keeping the water down on a six-barrel section of 150 feet on the Olmsted siphon requires the use of two eight-inch and two four-inch centrifugal gasoline powered pumps, which run day and night. An hour and a half shutdown of the pumps would delay concrete pouring for almost four hours.

Leakage in the concrete barrels was dependent on the compactness of the concrete, tightness of the joints between barrels and elimination of holes and flaws.

Each 25-foot length was provided with contraction joints with water stops normal with the center line of the siphon. These metal stops were bent and welded by the contractor and coated with a mastic compound.

Allowable leakage was 100 gallons per inch of diameter per mile each 24 hours. Siphons were tested by water run to the level of the intake and discharge floor level before backfilling. Nearly all of the completed sections are completely dry. One section is under 21 ft. of water and has held to less than one-half of the allowable leakage. However, success on the leakage problem did not come until developments were made.

First concrete forms used did not do so well and the invert on some of the barrels had to be removed and

(Continued on page 655)

F. O. Wyse

Francis O. Wyse, 48, for 19 years publicity manager of Bucyrus-Erie Company, South Milwaukee, Wisconsin, and publisher of Excavating Engineer, died September 15, in Columbia Hospital, Milwaukee, following an illness of almost 14 months.

Born in Salem, Massachusetts, May 4, 1897, Frank Wyse spent his early years in Toronto, Ontario, Canada. Following service in the U. S. Navy, he entered Massachusetts Institute of Technology and graduated in 1919 with a degree in mechanical engineering. He later joined the Blanchard Machine Company, Cambridge, Mass., from which position he came to Bucyrus-Erie Company in 1924.

In 1926 he took over the management of the publicity department and became publisher of Excavating Engineer which he had edited previously. He was widely recognized as an industrial advertising leader and a foremost trade publication publisher, serving as secretary-treasurer and vice-president before being elected president of the National Industrial Advertisers Association in 1937. He also served as president of the Milwaukee Association of Industrial Advertisers in 1932-33.

In connection with his Bucyrus-Erie publicity department and Excavating Engineer activities Mr. Wyse

FRANK O. WYSE

became identified with the National Crushed Stone Association. He was elected a member of the board of directors of the Manufacturers' Division, serving in this capacity from 1934 until the time of his death. He was elected chairman of the Directors for 1934, and in 1934 and 1935 was one of three representatives of the Manufacturers' Division on the Board of Directors of the National Association. In 1938-39 he served as chairman of the publicity committee of the American Road Builders Association.

Mr. Wyse became secretary-treasurer of the Milwaukee Post, Army Ordnance Association in 1942, which office he served efficiently and enthusiastically until illness forced him to relinquish his duties.

Besides his widow, Mrs. Elsie S. Wyse, Mr. Wyse is survived by two children of a former marriage, Frank Oliver, 16, and Clarinda, 14; his mother, Mrs. J. F. H. Wyse of Toronto; and three sisters, Mrs. Andrew L. Fabens, Cincinnati, Ohio, Mrs. William G. E. Kynoch, Ann Arbor, Michigan, and Mrs. A. J. Priest, Summit, New Jersey.

Mr. Wyse, a keen student of modern trade journalism, was well-liked and respected by his many friends. The industry and Excavating Engineer will miss him.

Veterans for Excavating Jobs

Ex-servicemen whose army experience and training closely parallels civilian jobs in the excavating industry are ready to do their part in postwar construction. By their MOSs (Military Occupational Specialty) you shall know them.

By SGT. ERNEST W. FAIR

HERE ARE THOUSANDS of veterans whose specialized military training ideally fits them for jobs with excavating contractors in civilian life. This military training can now be utilized by contractors, large and small.

Never before in the history of warfare was the average soldier given as much and as thorough training as he received in this war. The army had no other choice—it had to train thousands and thousands of specialists and it had to train each man in certain fundamental mechanical principles—else we would not have won this war.

There were of course a few instances of bungling in the army's training program, but for every soldier who received inadequate training for the job he was best fit to do there were thousands who were trained well.

The writer, by the fortunate nature of the army jobs assigned him, both in this country and in combat abroad, has had ample opportunity to see the results of this training in action and to realize that it has not been wasted, for thousands of today's veterans are better trained to hold jobs in the excavating industry.

Naturally not every veteran is readily adjustable to a job in the excavating industry, but there is a key to the proper selection of these ex-soldiers—their MOSs. By their MOSs you shall know them!

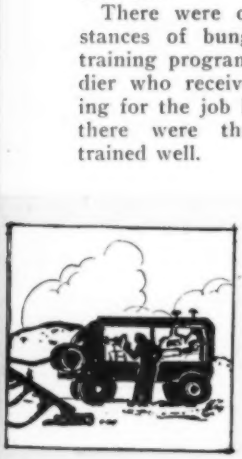
An MOS is a soldier's Military Occupational Specialty, or in plain words, the job he did while in the service. Every man was so classified following his training or from experience he had before he entered the army.

For our purposes the veterans army experience and training may be divided into those fields in which his work closely parallels civilian jobs in the construction field, or work akin to the acquired experience or schooling he received while in the army.

There are a number of specific army specialty numbers covering the contracting and excavating fields. Most of the men with these MOS numbers have been so thoroughly trained in army schools and through their on-the-job work that they can readily step from uniform into their civilian clothes and be on the job in short order. In this field the work is so closely parallel that little more needs be learned by the veteran other than changes he must make from the army way of doing things to the civilian methods.

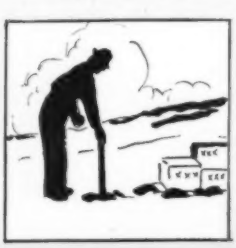
Here are the MOSs that are directly akin to similar jobs in the excavating and contracting industries:

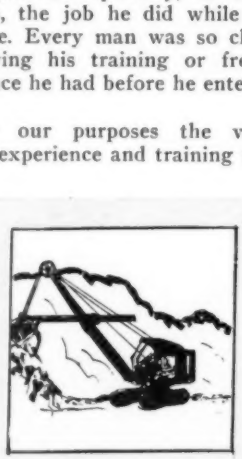
Construction Equipment Mechanic (319)—Inspected, repaired and tested construction equipment such as bulldozers, angledozers, road scrapers, ditching machines, road graders, road rollers, cranes, power shovels, air compressors, tractors, trailers, etc.; did repair and maintenance work on all, used mechanic's tools, has knowledge of the operation of construction equipment and generally has com-



EQUIPMENT MECHANIC

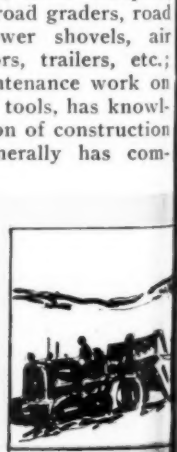
DEMOLITION SPECIALIST





POWER SHOVEL OPERATOR

OPERATING ENGINEMAN



CONSTRUCTION M... OPERATOR

pleted a course in construction equipment repair at an army school.

Construction Machine Operator (359) — Operated construction machines such as the above, is acquainted with their repair and maintenance, and generally completed a course in construction machine operation at an army school.

Demolition Specialist (533) — Used explosives for demolition of military equipment or enemy installations. Thoroughly familiar with most types of such explosives, their storage, handling and usage, and with all safety precautions in the handling of explosives.

Operating Engineman (081) — Operated and maintained gas or diesel engines and auxiliary equipment, did own repair and maintenance work thereon and has familiarity with most heavy equipment. Generally has completed a course in Engineman Operations at an army school.

Power Shovel Operator (064)—Operated and maintained diesel, gas or steam power shovels mounted on treads or trucks, did most repair and maintenance work thereon, and in some instances has completed a course in power shovel operation at an army school.

Well Driller (259)—Set up and operated well drilling machinery at military installations, repaired and maintained equipment, familiar with a wide variety of drilling tools and generally had civilian experience on the job before entering the service.

In addition to these directly related military jobs there are a number so close or adaptable to such work as office work that they bear listing here, for they correspond to a great many other than the specialist jobs. These are:

Administrative NCO (502)—Supervised and directed work of one or more administrative sections of a headquarters organization in the preparation of correspondence, records, forms, reports, etc., supervising preparation of such items and generally has a wide range of office experience.

Electric Motor Repairman (304)—Installed, tested and repaired electric motors and accessory equipment and has familiarity with motor operation, electrical theory, and the use of most hand tools. In some instances received a course in electrical repair work in an army school.

Auditor (390) — Audited fiscal or property records, examined inventories and property vouchers, etc., and generally had a college degree with major specialization in accounting or business administration or a great deal of civilian experience before coming into the service.

Cashier (269)—Received, issued receipts for, recorded payment of accounts and cash sales at army installations, operated office equipment, some bookkeeping work, and had to know a wide range of prices and be adept at figures.

Labor Foreman (356)—Supervised a group or groups in the performance of unskilled jobs, loading and unloading supplies, etc., and has some knowledge of supply and warehousing problems.

Shop Clerk (457)—Performed various clerical and technical duties in connection with the operations of military shops, etc., kept records, and generally had similar civilian experience before entering the service.

Stenographer (213) — Took dictation in shorthand of correspondence, board proceedings, hearings, reports, etc., generally an accomplished typist, did filing, indexing and record keeping and operated various office machines.

Supply Clerk (835) — Performed various clerical and stock handling duties in connection with receipt, storage, issue and shipping of general supplies and equipment. Maintained stock records pertaining to such items as amount, kind, and value of supplies and equipment received, issued, expended and balance on hand. Sometime had completed a course in supply activity at an army school.

Clerk-Typist (405) — Performed numerous clerical and typing duties in headquarters units, used most office machines and equipment; some were trained in clerk-typist schools but these were in the minority.

A familiarity with these MOSs makes picking the right man for the right job much easier.

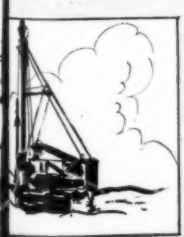
CLERK-TYPIST

SUPPLY CLERK

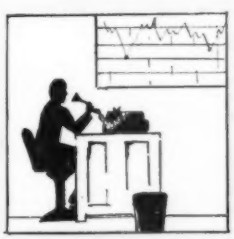
STENOGRAPHER

SHOP CLERK

CASHIER

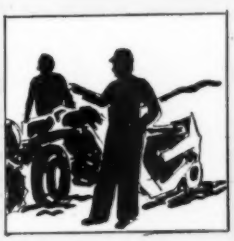


ELL DRILLER

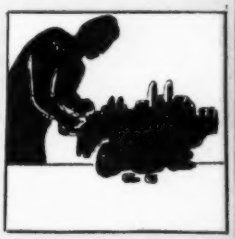


ADMINISTRATIVE NCO

AUDITOR



LABOR FOREMAN



ELECTRIC MOTOR REPAIRMAN

Field NOTES

Accurate Rock Screening

By hooking a set of standard laboratory screens to a small engine, Seabees running crushed rock tests at a western Pacific aggregate processing plant have not only succeeded in making a "lazy man's job" out of hard manual labor, but they have arrived at much more uniform screen analyses.

The two Seabee technicians, Pritchard and McComas, had to check all fine aggregate which was added to an asphaltic concrete mix at a hot plant. This fine material required a screening test several times each shift, and the Seabees' arms grew tired . . . too tired, particularly in the finer screen sizes down around No. 60, No. 100 and No. 200.

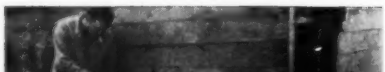
With the ingenuity for which the Construction Battalions have become famous, Pritchard and McComas got a small model BP Briggs & Stratton gasoline engine (it matters not how!) to drive their screens. They hooked the engine up through a set of reduction gears they stripped out of a wrecked Japanese generator, the reduction gears driving a flywheel at 30 rpm.

This flywheel, through a belt drive, actuates a platform which is connected to the driveshaft by a pair of Japanese piston rods. It is a makeshift affair, but it has a motion that would put anything on the old Barbary Coast to shame.

When the boys get ready to run a sample of fines, they weigh it out and put it in the upper screen pan, which contains ¼-inch mesh. The set of screens is then bolted to the platform, the engine started, and the sample works down through the screens for five minutes. After that time the engine is stopped, the screens taken apart, and the retained material on each size mesh is weighed and the per cent retained is calculated by slide rule. All weights are taken in the metric system for rapid, accurate results.

The field officers in charge of the asphalt plant report that testing has been speeded up by using the engine driven method, and that in case an adjustment of the mix is necessary much less rejectable material is batched before the adjustments are made.

By R. P. Day, CCM, USNR



• Small gasoline engine hooked up to set of standard laboratory screens used for running crushed rock tests in Pacific Area.

Tire Care

Air Pressure

Air within the tire carries the load and not the tire itself. Heavy duty tires operate at approximately 12% deflection and any other air pressure, upward or downward, has an effect on them. Too much pressure results in rapid tread wear and increased tendency toward bruises. Too little air pressure causes excessive flexing and may result in fabric breaks around the tire circumference, in addition to rapid or uneven tread wear. Good practice in conjunction with a careful study of each operation is to see that air pressure recommendations for each tire are stenciled on the axles.

Variation in Air Pressure—Dual Tires

It is sometimes desirable to vary air pressure between duals, particularly when pressure built up in service is greater in one tire than the other. Often in high speed truck operations, due to crowned roads or sprung axles, the inside tire builds up pressure faster than the outside and, when this occurs, it is desirable to increase pressure in the outside tire over standard recommendations. All four tires then pick up equal share of the load, and the possibility of ruining the inside tire is lessened. On some operations a 15-pound differential is needed but, normally, a variation of 5 to 10 pounds is sufficient.

Loads

Don't try to compensate for overload by increasing pressures beyond the schedules given in the Tire and Rim Table. Others have tried and it doesn't work. When tires were made with good old natural rubber, we sometimes could wink and get away with it, but now with synthetic tires, pre-war recommendations become "musts."

Speed and Heat

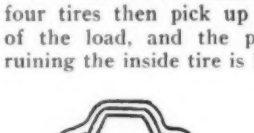
Tires generate heat which increases as speed goes up. A 16-ply tire will carry its full load at 25 mph but its rated load drops to 78% efficiency at 35 mph due to built-up heat.

Synthetics operate at temperatures higher than rubber tires — sufficient warning to keep speeds under 40 miles per hour. Some still believe tires should be bled to relieve air-pressure build-up caused by heat. This, of course, is a fallacy and experience has taught us not to bleed tires regardless of the amount of air-pressure build-up involved.

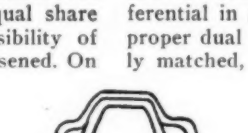
It is easy to interpret the relationship of air pressure build-up with temperature by using the 8½-to-1 formula. For every pound pressure build-up, tire temperature increases 8½°. Thus, with a 20-pound build-up, temperature within the tire would be 20 times 8½, plus atmospheric temperature, or 170°, and on a hot summer day road temperatures may reach 100° or more. In this case, the temperature is 270°, which is very close to curing temperature. Tires show signs of disintegration at temperatures higher than 240°. Operations where loads and speeds are factors will call for air pressure, load, and speed studies. You will probably find a larger size tire is indicated.

Mis-matched Duals

Large percentages of dual tire failures are caused by lack of proper differential in air pressure or from improper dual tire matching. Improperly matched, more load is carried by



• Increased deflection causes the tread to wipe and scuff over the road.



• Maximum road contact from wide tread indicates correct air pressure.

• Crown riding results in rapid tread wear and increases the possibility of bruises.

the larger tire, usually causing early failure in that tire. Use a caliper to measure diameters, or measure the circumference with a steel tape. Take all measurements after tires are mounted and inflated. This is important, because some tires are molded differently than others and inflated measurements are the only sure way of determining correct diameter or circumference. Obviously, you will find variations to tread wear and differences in growth after service, and if tires of exact measurements are not available, the smaller tire should always be placed on the inside dual position. Tolerance of ¼" in diameter or ¾" in circumference is permissible, but be sure to place the smaller of the two tires on the inside.

Load Analysis

Proper loading is important to prevent overload on any one axle. It must be watched carefully, because it is only human to load the heavy burden on the tail end of the truck. It will break the backs of the rear axle tires if it is indulged in. Always load forward.

Tubes

Every care must be taken in the mounting of both GR-S and GR-I inner tubes. Synthetic inner tubes (particularly those of the GR-S type) are not as elastic as natural rubber tubes. Unless lubricated thoroughly when mounted, localized stretching may cause failure. Some time ago a poster was prepared showing the steps to be taken in mounting all-synthetic tubes. It recommended vegetable oil soap to lubricate both tube and flap to eliminate localized stretching. In mounting synthetic tubes and flaps, four important steps are to be kept in mind: (1) lubricate, (2) inflate, (3) deflate, (4) re-inflate.

By C. R. Mason
The B. F. Goodrich Company

Sheave and Wire Rope Maintenance

Sheave and rope must work together in close harmony. **Worn grooves pinch wire rope** and when the sheave and rope are not working together properly, the rope chafes the groove.

Ropes may literally wear away a sheave, especially a soft sheave, but it's no telling how many ropes the sheave will wear out first.

Sheaves (including manganese steel) must have the groove concentric with the center of the shaft and be free from roughness or burrs of any kind. The bottom of the groove in a sheave should be round and smooth.

Sheave grooves should be gauged before installation of a new rope to see that the groove is not smaller than the rope.

• After cutting the ends, Seabees welded empty oil drums together to use as culvert pipe on Guam.
PAW Photo by Corsini

If it is smaller, the groove should be wipened and trued up to prevent pinching of the rope.

Contrary to popular belief, **a sheave groove wears smaller,** not larger.

Although corrugations in a sheave are caused by wire rope, wire ropes will not engage these corrugations like a chain on a sprocket.

Corrugated sheaves should be regrooved to prevent damage to new rope.

Experience proves that those who inspect their sheaves at regular intervals and keep them in good repair, get better wire rope service. The best wire rope for the job will not produce maximum service against pinching and filing of sheaves.

from *Ropeology*, Macwhyte Co.

Ingenious Tire Saver

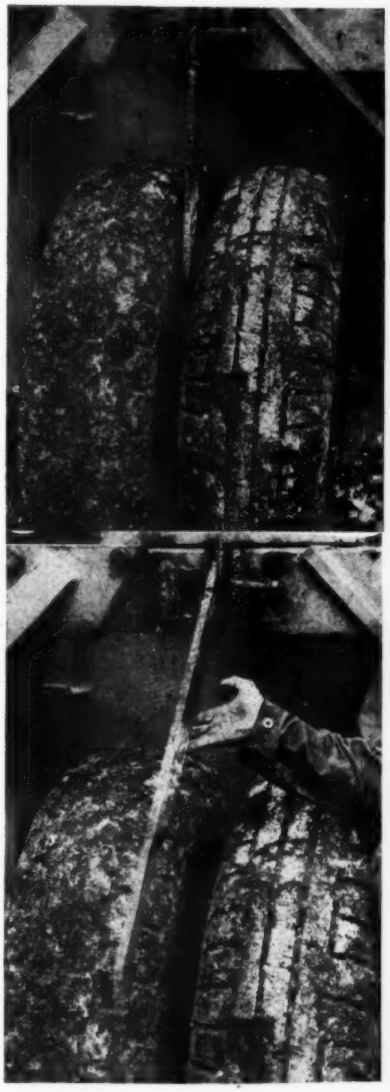
A simple device that can be manufactured at a cost of less than five dollars has been saving the U. S. Government thousands of dollars annually by protecting double-track tires of Army scrapers and trucks from damage by rocks and sharp objects, which would otherwise become wedged between the tires.

The gadget, which was invented by Warrant Officer Heimo Raski, consists of a 3¼-inch metal bar attached to the scraper frame. The bar is inserted between the tires and rests on the wheel hub. When the vehicle is in motion the device tosses rocks clear of the tires. The bar can be used on truck tires by adjusting it to the axle.

Raski's invention, which has been given no technical name, first came out in July, 1943 when he was with the 46th Engineer Construction Battalion on Kiriwana Island. The Battalion, which had the gadget accredited by general headquarters in the Pacific, used it to protect tires from coral rock in the atolls. Since its original diagram was filed, Raski's tire conservation device has been adopted by Army commands all over the Pacific.

W/O Raski, after drawing plans for his gadget, turned it over to Sgt. Wilson Smith for mass production. Sgt. Smith, who worked in the 46th's Engineers, heavy equipment shop, was a welding engineer at Pudget Sound Navy Yard before induction.

Raski, who was a corporal at the time he introduced his invention, was transferred back to the States on rotation where he was in charge of heavy equipment dumps at New Orleans. Raski was given the Legion of Merit award for his services in the Pacific.



• This ingenious tire saver consists of a 3¼-inch metal bar attached to the scraper frame. One end of the bar is inserted between the tires and rests on the wheel hub so that when the vehicle is in motion the device tosses rocks clear of the tires.

EX-LAFFS

BY J. G. Patterson

"Just think of it! Your new boss here was stationed in the South Pacific where he didn't see a white woman for two years."

"Sure, it has gotta come down — but be a sport, Gus, let her finish her bath first!"

"Awright, you yardbirds — quit playin' and get to work. We gotta clear this jungle mess by tonight!"

"Now that's funny Sarge — it wouldn't work at all a few minutes ago."

"No, I'm not being over the cautious — yesterday, I losa th' stalka banans, sixa apples, and big buncha th' grapes!"

...a peek into the future—

3 Great New Cedarapids Tandem Straightline Gravel Plants for Tomorrow's Jobs

for BIG Jobs—*The Master*

MEDIUM Jobs—*The Junior*

SMALL Jobs—*The Baby*

THREE new Cedarapids plants, differing only in size, will be ready for work on your 1946 contracts. Engineered and job-tested to rigid Cedarapids performance and economy standards, they will give you the production margin to make low-bid contracts show a good profit.

Check These Cedarapids Features:

Complete Single-Unit Portability. Fast set-up and take-down. On contractor's job tests, less than one-half hour to put the Junior Tandem into profit-making production!

Balanced High Capacities. Careful synchronization of conveyor speeds with screening, roll and jaw crusher capacities assures smooth, continuous operation at top efficiency.

Adaptability. Readily adaptable to any job conditions. Easy to convert into a complete Cedarapids Unitized Plant with primary crusher and washing and screening plant.

Extra Belt, Screen and Crusher Capacities for the tough jobs and hard-to-work materials.

Centralized Control. One man on control platform handles production.

Uniform Aggregate. Straightline Tandem design simplifies processing, insures aggregate to meet exacting specifications.

Low Maintenance. Rugged Cedarapids construction and easy access for greasing and adjustments keep maintenance costs at a minimum.

See your nearby Iowa distributor for complete details on these new Cedarapids Tandem Straightline Plants, or write direct.

IOWA MANUFACTURING COMPANY

Cedar Rapids, Iowa

Cedarapids

Built by IOWA

THE IOWA LINE

of Material Handling Equipment Includes

ROCK AND GRAVEL CRUSHERS
BELT CONVEYORS—STEEL BINS
BUCKET ELEVATORS
VIBRATOR AND REVOLVING SCREENS
STRAIGHT LINE ROCK AND GRAVEL PLANTS
FEEDERS — TRAPS
PORTABLE POWER CONVEYORS
PORTABLE STONE PLANTS
PORTABLE GRAVEL PLANTS
REDUCTION CRUSHERS
BATCH TYPE ASPHALT PLANTS
TRAVELING (ROAD MIX) PLANTS
DRAG SCRAPER TANKS
WASHING PLANTS
TRACTOR-CRUSHER PLANTS
STEEL TRUCKS AND TRAILERS
KUBIT IMPACT BREAKERS

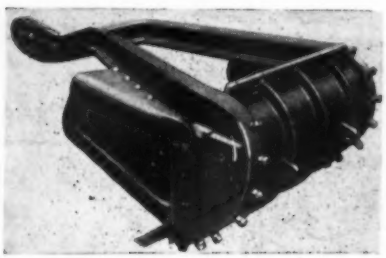
Equipment

you ought to KNOW ABOUT

Box Scraper Buckets

Manufacturer: American Manganese Steel Division, Chicago Heights, Ill.

Claims: Made in two types, the ¼ and ¾ box, these scrapers are declared by the manufacturer to feature high capacity, all manganese steel construction, design simplicity, readily renewable scraper blades, curved backs and proper balance. The curved



back, it is reported, aids in quickly "rolling up" capacity loads. The 30 inch wide ¼ box bucket is made with sides cast integral with the back. A wearing shoe protects the bail against abrasion wear. The ¾ box bucket is 66 inches wide, 72 inches long overall, and has removable 33-inch long side plates. Wearing runners on the pulling bail afford protection against abrasive wear.

Overlay Electrodes

Manufacturer: The Sight Feed Generator Company, Richmond, Ind.

Claims: With a metallic coating which blends with the base metal to eliminate slag, six kinds of Rexaloy electrodes are stated by the manufacturer to fit every type of abrasion or shock wear. It is claimed "brown tip" can be forged and heat-treated to be used for tractor track rails, shovel crawler pads, etc., while "orange tip" is adapted for heavy impact coupled with abrasion for shovel dipper lips, dredge casings, etc. Other rods include "yellow tip" which the manufacturer recommends to resist distortion on crusher jaws, drill bits, or scraper blades; "black tip" is claimed the hardest non-tungsten electrode known for extreme abrasion; and "purple tip" is a manganese rod for surfacing shovel tumblers, sprockets, cat front idlers, etc.

For further details about the equipment on these pages please write to the manufacturer, mentioning Excavating Engineer.

Hard-Surfacing Electrode

Manufacturer: The Hobart Brothers Company, Troy 1, Ohio.

Claims: Designated as "Tufanhard", this overlay rod is claimed to weld like mild steel in all positions, "wear like a diamond", and have low spatter loss. The deposit is declared able to be heated and drawn for a hard alloy weld requiring little grinding for finishing. Made in three grades and four sizes.

Conveyor

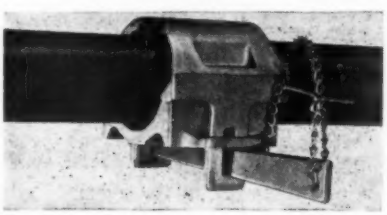
Manufacturer: American Conveyor Company, 2435 Indiana Ave., Chicago 16, Ill.

Claims: For raising bulk materials up steep pitches impractical for a belt, this electric conveyor finds application in unloading sand, cinders, clay, salt, and similar bulk materials. Chain flights feature the unit which can lift to 14 feet at 160 feet per minute, it was claimed. Roller sprocket chain drive, 40 feet of rubber covered cable, self-aligning ball bearings and steel frame welded throughout are advanced as improvements by the manufacturer.

Flexible Pipe Coupling

Manufacturer: Drinkwater, Inc., 2323 S. Michigan Ave., Chicago 16, Ill.

Claims: Faster coupling of pipe at lower cost and with greater flexibility is claimed by the manufacturer for the new Presto-Lock couplings made in 11 sizes from 1¼ inches to 16

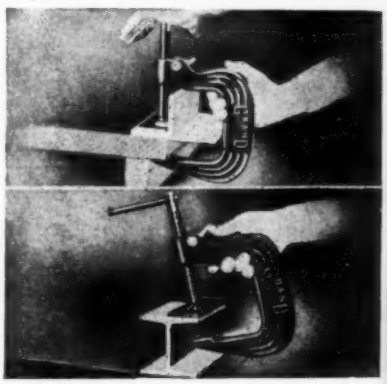


inches. Usable with any plain end pipe without threads, grooves or flanges, only a hammer is required in assembly, the manufacturer said. Gaskets of synthetic, neoprene or natural rubber have been specially designed to effect a permanently tight seal on all types of pipe lines, to withstand all normal working pressures of gas, steam, oil and water. Plugged or frozen lines can be released immediately by a tap of the wedge key and pipe can be readily turned, and any section removed without affecting the remainder of the line.

Deep Throat Clamps

Manufacturer: Grand Specialties Co., Grand Avenue at Troy, Chicago 22, Ill.

Claims: In addition to its extra deep throat, the manufacturer states

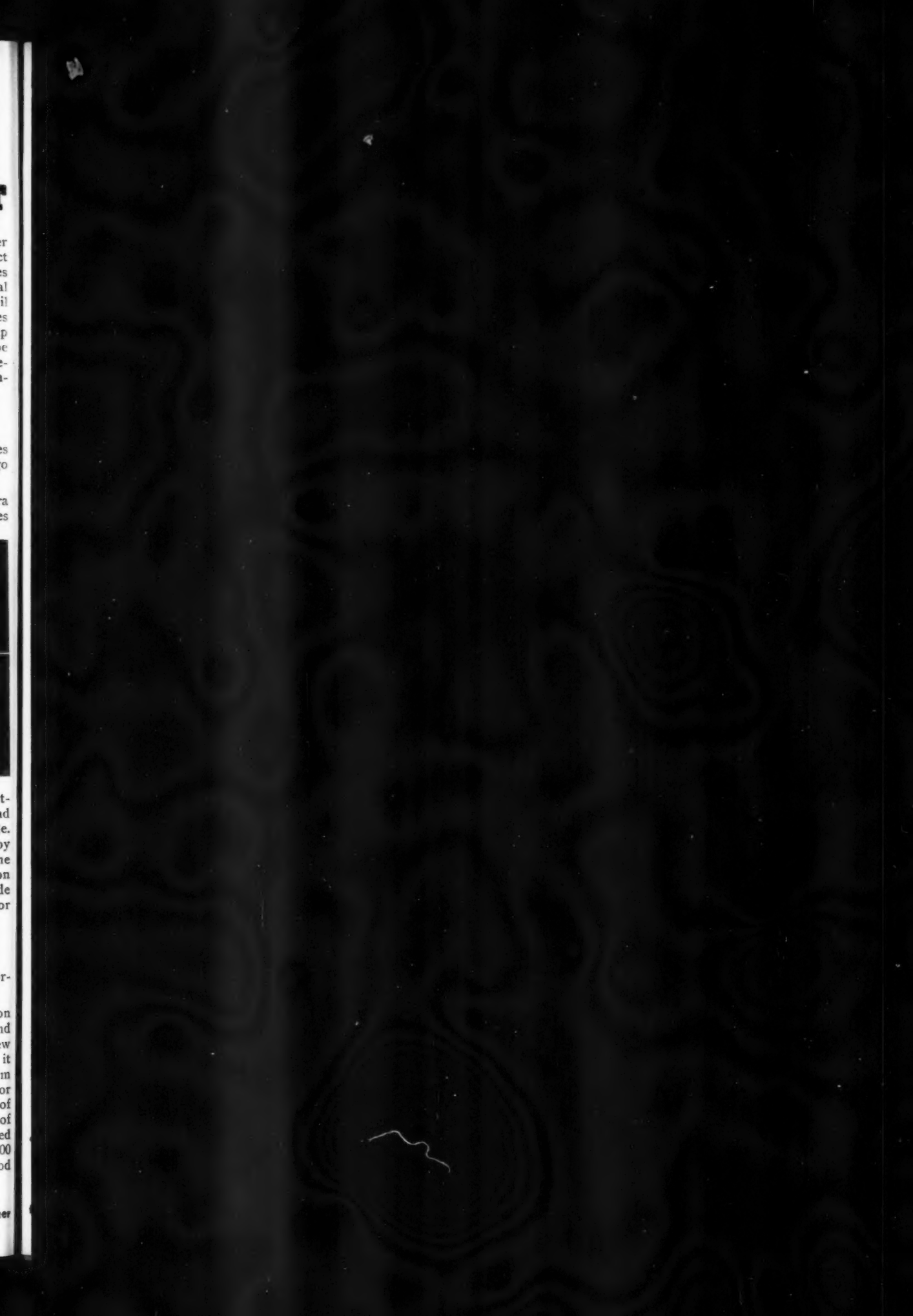


this clamp can be positioned instantly by pushing on a ratchet screw and tightening with a loose-proof handle. It was stated release is effected by thumb-pushing a pawl to release the ratchet. The clamp holds work on slanting or irregular surfaces, is made of alloy-steel, and is copper-plated for weld-spatter protection.

Electrode for Cast Iron

Manufacturer: Harnischfeger Corporation, Milwaukee 14, Wisconsin.

Claims: "Harcast", an all-position mild steel electrode for welding and repairing cast iron is entirely new with claimed characteristics that it fuses well with either mild or medium carbon steel, making it suited for joining cast iron with other types of steel. With a certified yield point of 50,000 pounds p.s.i., the deposited metal has tensile strength of 60,000 pounds, roughly double that of a good grade of cast iron.



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DOZERSHOVEL

WITH the flexible Bucyrus-Erie Dozershovel you're ready for anything in the line of handling bulk materials because you have at your command the functions of three machines: a small power shovel, a bulldozer, and a yard crane. The shovel bucket gives you speedy scooping, lifting, carrying, and loading service; the easily interchanged bulldozer blade provides fast digging, leveling, grading; handy yard-crane service is supplied by means of the crane-hook welded to both bucket and blade. Investment in one gives you the work of three — a big reason why the Dozershovel is always busy making money for you! . . . There are plenty of other reasons, too: full front visibility, balanced design, low overhead clearance, oscillating tracks, positive down pressure, simple rugged construction. Ask your International TracTracTor Distributor about these and other features that mean money-making performance on a wide range of jobs.

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INTERNATIONAL TRACTRACTOR DISTRIBUTOR

Shots from the FIRING LINE

President Recommends Release of Highway Funds

President Harry Truman has recommended to Congress release of funds for highway programs authorized under the Federal Aid Highway Act of 1944. This will make available $500,000,000 each of the next three years to be matched dollar for dollar by the states.

Road Builders Meet in Chicago in 1946

American Road Builders' Association will hold its forty-third annual convention at the Stevens Hotel in Chicago the week of January 14-18, 1946, James J. Skelly, president, announced following a conference of association officials. With the passage of the concurrent resolution by Congress releasing federal-aid highway funds, the meeting in Chicago will launch the three billion dollar postwar construction program which can now get under way.

"In the past we have held our yearly meetings in various cities, and we expect to do so again, but with the nation entering its reconversion period and transportation still a problem, we chose Chicago because of its central location and its hotel accommodations," said Mr. Skelly.

Speakers prominent in engineering, industry, business and education will appear on the program of the four-day session, he added.

Prospect for Gold in Boise Project Area

Uncle Sam has become a gold mine prospector in the reservoir area to be flooded by the Anderson Ranch Dam of the Boise Project in southwestern Idaho.

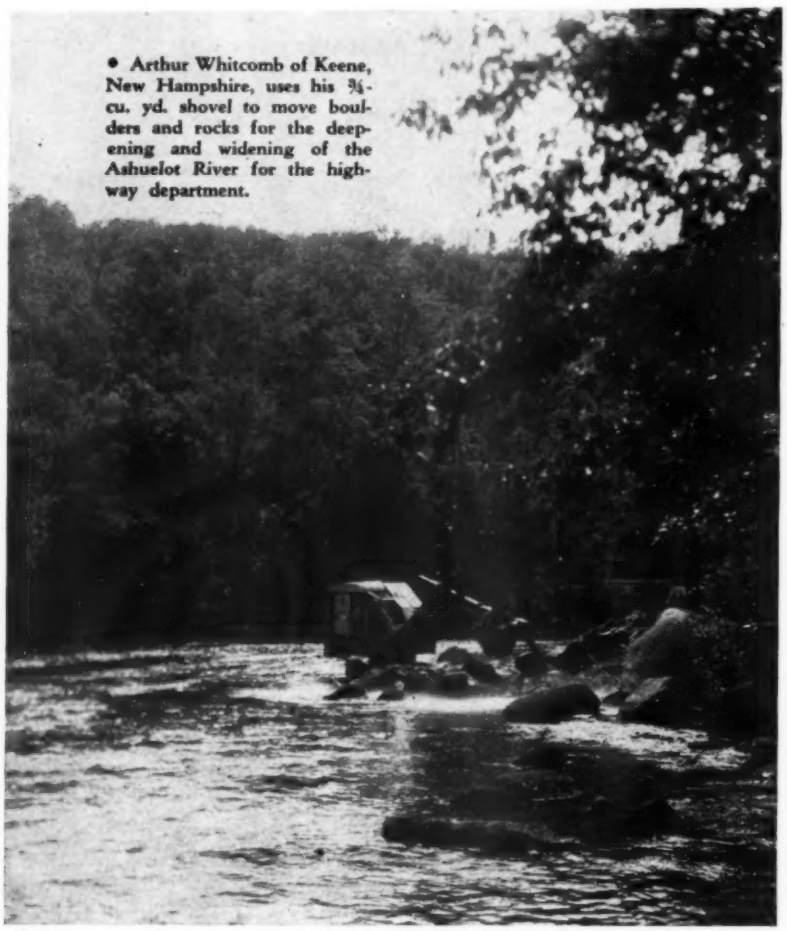
A number of placer mining claims, situated along the South Fork of the Boise River, from five to eight miles above the point where the Bureau of Reclamation is constructing the highest earth-fill dam in the world, are being investigated by churn drilling and sluicing, it was learned at the Bureau's Regional Office in Boise. The mineral investigations are being conducted under the supervision of W. H. Koch, mining engineer with the Branch of Field Examination of the General Land Office.

A crew of three men are engaged in the mining operation. The churn drill is used to obtain samples of mineral deposits at various depths below the surface of the ground. Portions of these samples are then washed in a sluice-box to determine the mineral content. Work on several claims has been completed.

Columbia Basin Irrigation Project Will Provide Jobs

Jobs providing approximately 128,000,000 man-hours of employment for returning veterans and others can be supplied in construction of the multi-million dollar Columbia Basin irrigation project in South Central Washington when manpower, funds, and materials are available, the Bureau of Reclamation estimated.

Inquiries received by the Bureau from members of the armed services indicate that many will seek employment in the construction program when work begins and that large numbers intend remaining in this area to establish farm homes on newly irrigated land.



• Arthur Whitcomb of Keene, New Hampshire, uses his ¾-cu. yd. shovel to move boulders and rocks for the deepening and widening of the Ashuelot River for the highway department.

Power Crane and Shovel Group Discuss Surplus

The Power Crane and Shovel Industry Advisory Committee of the Surplus Property Board recently met in Washington, D. C., to formulate a policy for the disposal of surplus machines and parts.

Members of the committee are: P. H. Birckhead, Vice President, Bucyrus-Erie Company, South Milwaukee, Wisconsin; E. W. Botten, Secretary-Treasurer, The Owen Bucket Company, Cleveland, Ohio; Arnold R. Corbett, Vice President, Unit Crane and Shovel Corporation, Milwaukee, Wisconsin; John P. Courtright, Vice President, The Marion Steam Shovel Company, Marion, Ohio; T. M. Deal, President, Link-Belt Speeder Corporation, Chicago, Illinois; George J. Dimond, Vice President, Insley Manufacturing Corporation, Indianapolis, Indiana; Carlton R. Dodge, Northwest Engineering Company, Chicago, Illinois; M. B. Garber, The Thew Shovel Company, Lorain, Ohio; A. M. Guthrie, Sales Manager, The Buckeye Traction Ditcher Company, Findlay, Ohio; W. C. Horr, President, The Byers Machine Company,

IN ALABAMA MINE 2 TOURNAPULLS STRIP 3000 YARDS PER 10 HOURS ON 800' AVERAGE ONE-WAY HAUL

urnapulls dig through 21' of clay
d shale to 4' of solid rock over
e 30" coal seam. Crawling tractor
sh-loads first Tournapull, snatch-
ads second, to save turning time.

NEAR JASPER, ALA., S. R. Batson Co. of Birmingham use two Super C Tournapulls to strip a 54-acre coal mine, removing 18' of clay and 3' of shale, while a 1½-yard shovel follows to take out 4' of rock over a 30" coal seam. The seam sometimes pitches to 40° and is worked across the pitch, with Tournapulls loading at an angle downhill and heaping 15-yard loads in 75 to 85 feet in one minute.

Hauls are 400 to 1000 feet, average 800' one way. On the 400' hauls, Tournapulls are producing at costs as low as tractor scrapers, and, of course, materially beating crawler costs on the longer hauls. Output for the two Tournapulls averages 3000-yards-and-over every 10 hours according to Mr. Batson, who states that, in two months of operation, they have had only two hours down time.

tween loads, the LeTourneau Tilt-
zer cleans up pit and grades.

By taking off the top 21 feet of overburden down to the rock with Tournapulls, the 1½-yard shovel can make a much wider cut. Here, a 30 to 40-foot wide cut is being worked without rehandling. In addition, these versatile Tournapulls cut pit entrances and reduce grades on truck haul-roads.

If you have stripping problems involving rehandling, your LeTourneau distributor will be glad to help you check costs on this modern high-speed Scraper method with rubber-tired Tournapulls. See him TODAY.

CM3M

urnapulls travel loaded up 150'
10% grade and 250' of 6%
ade on an average 800' haul.

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Ravenna, Ohio; S. M. Hunter, Vice President, American Hoist and Derrick Company, St. Paul, Minnesota; G. E. Long, President and Gen. Manager, Koehring Company, Milwaukee, Wisconsin; M. C. McNeil, President, The Osgood Company, Marion, Ohio; Charles F. Meffley, "Quick-Way" Truck Shovel Company, Denver, Colorado; Morgan Ramsey, Exec. Vice President, Bay City Shovels, Inc., Bay City, Michigan; F. Salditt, Vice President, Harnischfeger Corporation, Milwaukee, Wisconsin, M. K. Tate, Lima Locomotive Works, Lima, Ohio.

H. A. Radzikowski of Public Roads Administration outlined briefly the needs of state highway departments and stated that there is an immediate demand for 569 shovels and 177 draglines, practically all for ½ and ¾ cu. yd. machines. It was stated that if counties are included this figure would be 50 per cent higher.

R. H. Chiles, Office of Surplus Property, made a rough estimate that the total number of new units of all classes to be declared surplus would be about 1,000, including those declared since August 15. Col. E. R. Needles, Chief, Redistribution and Salvage Division, Corps of Engineers, said that in the near future the percentages of used machines declared surplus will not be as high as it has been because they will be disposed of to RFC and the Veterans Administration. While he had no specific information on the Army's release of parts, he said the first echelon of parts is being declared with the new machines.

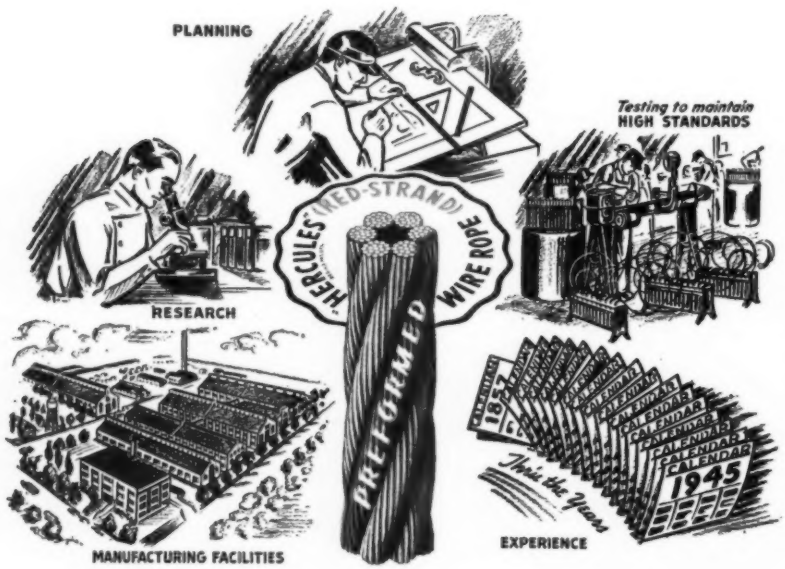
The committee reaffirmed the recommendations made by the Power Crane and Shovel Association in its report of March 14, 1945, on the disposal of surplus war equipment and parts. In essence, the association had recommended a consignment and agency arrangement whereby the original manufacturer of the equipment would be appointed by the Department of Commerce to act for that department as an agent to sell back through his own distributing organization the machines of his original manufacture. The manufacturer would agree to sell surplus equipment at a predetermined rate of disposal, based on the number of sales of new units that he was currently manufacturing and selling at the time of disposal.

Some of the advantages of the preferred plan, industry representatives pointed out, would be as follows: (1) to provide a more economical operation for the Government; (2) to permit maximum employment in every manufacturing plant; (3) to avoid dislocations in the industry; (4) to achieve the objective of using normal trade channels; and (5) to provide for speedy distribution of the surplus. The committee agreed that the present surplus of 310 machines would all have been sold had the proposed plan already been put into effect. While demand is so great that the Department of Commerce should have no difficulty in disposing of the equipment, other methods might seriously affect the industry.

J. V. McCullough, Director, Automotive Division, Consumer Goods, SPB, government chairman of the meeting, indicated to the committee that the Surplus Property Board thus far has not approved any consignment and agency plans of distribution for products under the jurisdiction of the Consumers Goods Division. The disposal agency would prefer some conclusive arrangement, involving a definite sale, and would object to the proposed plan on the ground that the procedure would extend over too long a period of time. In reply, an industry representative expressed the opinion that the sale of 1000-1500 machines could be accomplished within a year under the plan preferred by the committee. Comment showed, however, that the agency aspect of the plan is less important to the industry than it was when the association report was issued, as the surplus will apparently be much smaller than had been anticipated. The main consideration is for the manufacturers to control the distribution.

In view of the uncertainty as to whether the consignment and agency arrangement will be acceptable, the committee recommended that the manufacturer have an opportunity to discuss the repurchase of small quantities of his own machines at a reasonable

(Continued on page 626)



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The quality of "HERCULES" (Red-Strand) Wire Rope is never a matter of chance . . . it is the result of careful planning, diligent research, long experience, advance manufacturing facilities . . . *plus* high standards and the determination to maintain them.

As it is difficult to point out which is the most important leg of a three-legged stool, so it is hard to say which of these factors is the most vital . . . we know from experience that *all* are necessary. Proof of wire rope quality is in performance . . . why not find out for yourself just what "HERCULES" can do on your own job? Many who have made this test are now regular users.

Yes, there is a correct construction and type of "HERCULES" (Red-Strand) Wire Rope to fit any job . . . anywhere.

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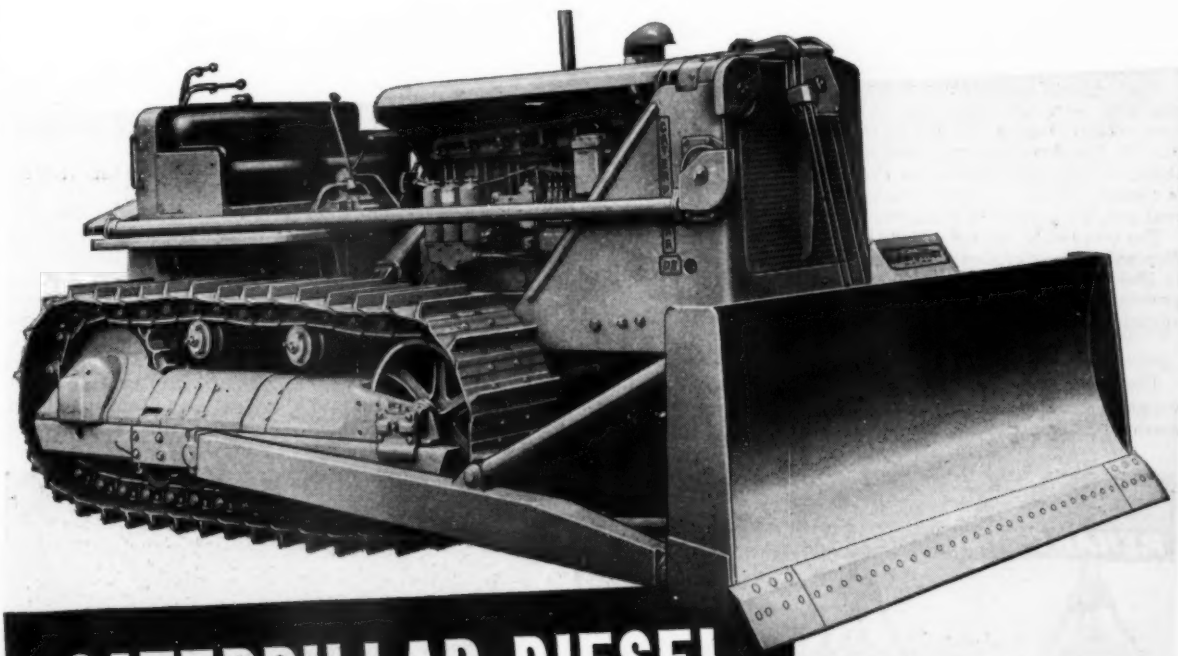
- ENCLOSED OPERATING CABLES
- LONG-LIFE CUTTING EDGES
- EASY BLADE ADJUSTMENTS
- QUICK MOUNTING
- UNIT MANUFACTURE
- ONE SERVICE SOURCE
- CORRECTLY GROOVED SHEAVES
- LONG CABLE LIFE
- SAFE OPERATION
- FINE VISIBILITY
- HIGH LIFT
- LOW DROP
- STRAIGHT OR ANGLING CUT



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ENGINES • TRACTORS • MOTOR GRADERS
EARTHMOVING EQUIPMENT

• Bullgrader dozes rock into grizzly for Evergreen Timber Co. near Mollala, Oregon.

Shots from the Firing Line

(Continued from page 622)

price to meet spot requirements that might develop. Chiles assured the group of his willingness to discuss such sales with the manufacturers. The regional offices of the Department of Commerce have been instructed to inform the manufacturers of all new machines and parts which are available for sale on a fixed price basis.

While manufacturers are welcome to apply for new machines, Chiles said, it does not necessarily follow that the Office of Surplus Property will sell to them, as the Office of Surplus Property is required to give preference to Federal and tax-supported agencies.

The committee recommended that the disposal agency confine its direct sales to Federal agencies. Objection was expressed against sales to tax-supported agencies and other ultimate consumers.

USED MACHINES

The committee also endorsed the Association's recommendation on used machines; i.e., that used equipment should be sold to regularly established dealers as the manufacturers are not in a position to handle it.

PARTS AND ATTACHMENTS

The Association's recommendation on the disposal of parts was read to the committee and taken as its recommendation. Under this proposal, parts would be handled by negotiation between the manufacturer and the Government, involving the selective sale of parts which the manufacturer can use.

Attention was called to the need to avoid breaking the market by dumping large quantities of parts which the Government has ordered in amounts far beyond the civilian requirements.

The discussion indicated that attachments should also be handled by negotiation on the part of the manufacturer and the Government.

PRICING

In discussing the pricing policies of the Surplus Property Board and the Office of Surplus Property, McCullough indicated that the intention of the Office of Surplus Property to substitute fixed prices for bids in the disposition of durable goods is a change to the normal operation of the industry. The Director of the Office of Surplus Property has stated that the important consideration is to get a fair price rather than the highest possible price. On the other hand, Mr. Chiles pointed out, the Office of Surplus Property does not wish to cut prices and break the market for the industry.

Discussion developed the fact that the pricing formula submitted by the Surplus Property Board to the Office of Surplus Property is based largely on the principles which the industry believes must be followed to achieve correct pricing. This means that disposal prices in general approximate normal prices, subject to discounts to compensate for the disadvantage of marketing a surplus machine and for the condition of the item. Since a disposal machine identical in every respect with

More tonnage per cost-dollar is the aim of every pit and quarry operator — that's why Primacord is depended upon to do more jobs today than ever before.

Primacord is effective because it's SAFE. It cannot be set off by friction, spark, or any ordinary shock.

Primacord is effective because it's EASY TO HANDLE. Light weight, plus tensile strength and flexibility, makes it practical for use in holes, tunnels, surface blasting and demolition work.

Primacord is effective because it can be guided. Its detonating wave is almost instantaneous — yet follows trunk lines in definite sequence so that front rows shoot first, relieving the pressure on back row shots.

Primacord is effective because it works all the way. A continuous line of Primacord from the top to the bottom of a hole insures complete detonation of each cartridge.

Primacord is effective because it's ECONOMICAL. It cuts loading time — eliminates the use of caps in the hole, and extra caps in deck loads or broken charges.

P-11

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Five American dollars — as sound as these five reasons for using Primacord Detonating Fuse.

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Since 1836

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the manufacturer's machine is worth less simply because it is a disposal item, a lower price is the fair price.

It was pointed out that the Association's recommendations, which were approved by the committee, cover the question of pricing.

MODIFICATION

An industry spokesman emphasized the fact that machines should be sold through normal trade channels, rather than direct to the consumer, because some of the machines must be modified for civilian use before they can command the full ceiling price. It is only through the normal trade channels that such modifications can be handled. In the event that the Surplus Property Board should decide to sell direct to the dealer, only the franchised dealer could make the necessary changes and only he would be a normal trade channel.

The committee adopted as its own the Association's recommendation on salvage and scrap as it is related to criteria for surplus declaration.

Excavate 152 Million Yards In Northwest Since 1904

Thirteen and a half million cu. yds. of concrete—enough to build a wall five feet high and nearly a foot thick around the United States—have been placed by the Bureau of Reclamation in the Pacific Northwest since it began constructing irrigation and multiple-purpose projects in this area in 1904, the Regional Office in Boise disclosed.

On the basis of annual summaries of project construction results received, R. J. Newell, Acting Regional Director for the Bureau, stated that more than 152,000,000 cu. yds. of earth and rock—about 15 times the bulk of the seven great pyramids of Egypt—had been excavated. The quantity removed is about five times as much as excavated by the Tennessee Valley Authority and about two-thirds that required in the building of the original Panama Canal.

The summary reports, submitted each year by project superintendents, further discloses, Newell said, that the Bureau has constructed 48 storage and diversion dams in the Northwest. The reservoirs created have a capacity of 16,541,567 acre-feet and, through 5,304 miles of canal, these serve a full or partial supply of irrigation water to more than 2,000,000 acres of irrigable land on 14 projects. Nine powerplants have been constructed on Federal Reclamation developments in the region.

The dams constructed by the Bureau in the Pacific Northwest range in size from simple, small diversion structures of a few feet in height to gigantic storage dams of unprecedented proportions. Through the years since the Federal Government began construction of self-liquidating irrigation projects in the arid and semiarid sections, the need for additional water has resulted in the construction of progressively larger and more complicated dams, on the largest rivers in the West.

The outstanding Reclamation structure in the Northwest, or for that matter in the world, is Grand Coulee Dam, world's most massive block of concrete. For 18 years, from 1915 to 1933, the region had the distinction of having the highest dam in the world; first Arrowrock on the Boise River, and later Owyhee on the Owyhee River in southeastern Oregon.

The further harnessing of land and water resources of the region in the postwar period will ultimately result in the construction of new dams and irrigation works. In the Bureau's inventory of potential projects for construction in the postwar period, 50 additional storage and diversion dams are listed. The new facilities would bring nearly 2,000,000 acres of new land under cultivation, provide a supplemental supply of water for one and one-half million acres now suffering with shortages, and greatly increase Federal hydroelectric power production.

In addition to the items previously cited, the Bureau has erected the following in the states of Oregon, Washington, Idaho, and Western Montana: 44 pumping plants; 81,500 canal structures; 87 tunnels having a combined length of 157,813 feet (30 miles); 3,494

(Continued on page 632)

SPEED OUTPUT with GATKE SWING FRICTIONS

GATKE moulded Swing Friction for a NORTHWEST Shovel. Available for all models.

TREMENDOUS POWER—for effortless control—no let down when things get hot.

SMOOTH ACTION—for precision inching—no grabbing or chattering.

LONG WEAR LIFE—beyond comparison.

. . . These are some of the reasons why GATKE Swing Frictions help get the job done FASTER. Try them and compare results!

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Shipped from stock for popular shovels, cranes, hoists, etc. Just tell us what you need or send for literature.

GATKE QUALITY BRAKE LINING & CLUTCH FACINGS are made for ALL applications

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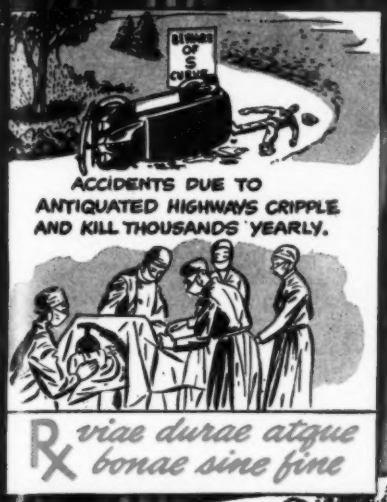
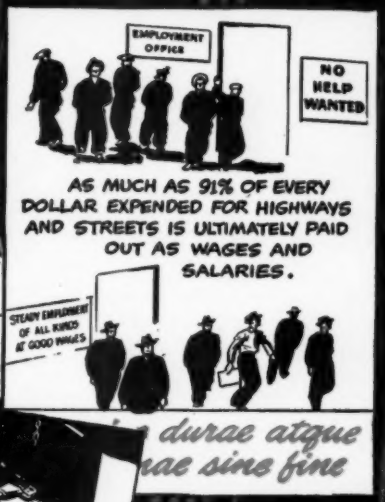
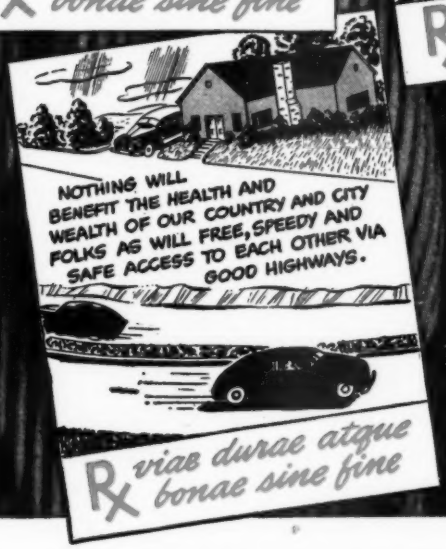
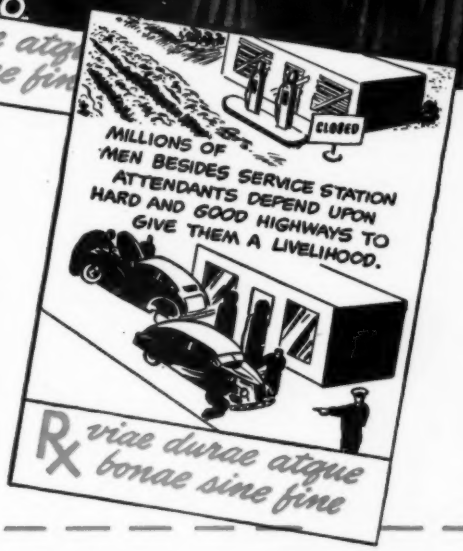


LOW, NARROW AND LIGHT BRIDGES CONSTITUTE UNSAFE, OFTEN UNUSABLE LINKS IN OTHERWISE ADEQUATE ROADS.
Rx viae durae atque bonae sine fine


EMPLOYMENT OFFICE
NO HELP WANTED
AS MUCH AS 91% OF EVERY DOLLAR EXPENDED FOR HIGHWAYS AND STREETS IS ULTIMATELY PAID OUT AS WAGES AND SALARIES.
Rx durae atque nae sine fine


NOTHING WILL BENEFIT THE HEALTH AND WEALTH OF OUR COUNTRY AND CITY FOLKS AS WILL FREE, SPEEDY AND SAFE ACCESS TO EACH OTHER VIA GOOD HIGHWAYS.
Rx viae durae atque bonae sine fine

PROMPT AUTO REPAIRS
FEW CARS AND TRUCKS SERVE THE FULL LIVES OF WHICH THEY WILL BE CAPABLE WHEN ALL ROADS ARE HARD AND GOOD.
Rx viae durae atque bonae sine fine


CLOSED
MILLIONS OF MEN BESIDES SERVICE STATION ATTENDANTS DEPEND UPON HARD AND GOOD HIGHWAYS TO GIVE THEM A LIVELIHOOD.
Rx viae durae atque bonae sine fine

THE DOCTOR HAS PRESCRIBED...

✳ HARD AND GOOD ROADS WITHOUT END

Not only has the doctor written this prescription—he has earmarked funds to pay half the cost of a 3 year course of medicine.

The other half (1½ billion dollars) must be raised by 48 patients. The will to get well of a majority of them is at a low ebb. Only 7 states have sufficient plans for the first year of the program. Plans for highway projects ready to let amount to less than half the medicine apportioned by the doctor for the first year to say nothing of the other 2½ years.

A lot of nursing is yet necessary. If a large highway construction program is to be gotten under way in 1946, then everyone in the industry and profession must turn nurse and help the doctor coax the patients to take their medicine. Otherwise, men will go unemployed, traffic will snarl and the next dose of medicine will be plenty bitter for lovers of the American way of life to take.

UNION WIRE ROPE CORPORATION, 2142 Manchester Ave., Kansas City 3, Mo.

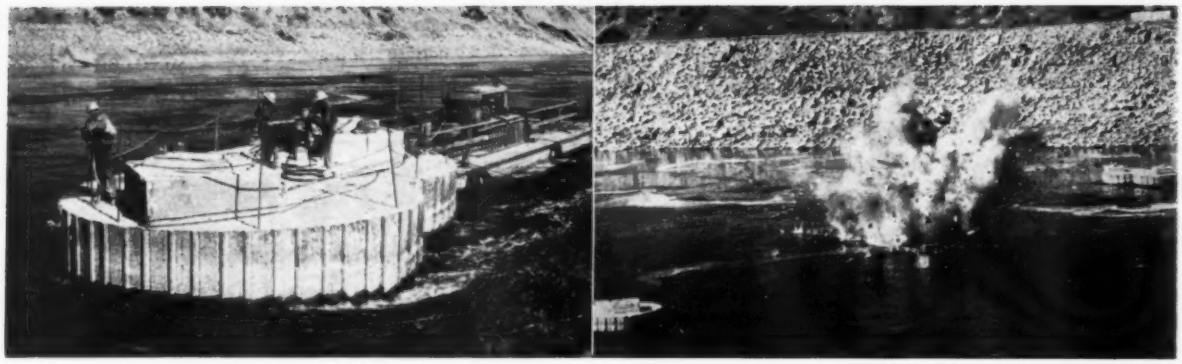
☐ Send a Free copy of book entitled "The Road Ahead"
☐ Send a Free copy of book entitled "Put Your Town on the Air Map"

Name.....

Firm .....

Address..... *City*..... *Zone*... *State*.....

E-45



Shots from the Firing Line

(Continued from page 628)

bridges, having a combined length of 91,995 feet (17 miles); 5,337 culverts, having a combined length of 262,168 feet (50 miles); 3,403,233 feet of pipe (644 miles); 2,570 flumes, having a combined length of 650,472 (104 miles) feet; 1,170 miles of roads; 1,122 miles of telephone lines; and 390 miles of operating transmission lines. In the placement of 13,470,147 cu. yds. of concrete, the Bureau used more than 15,000,000 barrels of cement.

The Bureau of Reclamation, originally known as the Reclamation Service, began construction operations in the Pacific Northwest in 1904, two years after it was organized by Congress. It undertook its first work on the Minidoka Project in southeastern Idaho. Two years later, in 1906, construction was initiated on four additional projects, the Boise in southwestern Idaho, the Yakima in south central Washington, the Okanogan in north central Washington, and the Umatilla in northeastern Oregon.

The initial supply of water for irrigation was delivered in the Northwest by the Bureau in 1907, to land on the Minidoka and Yakima projects. Okanogan and Umatilla lands were first served in 1908, and those of the Boise Project in 1909.

Engineers of the Bureau of Reclamation have been among the pioneers in the advances made in dam design and construction. In a related field, they also were instrumental in improvement of the design of outlet works capable of regulating the discharge of the water impounded by these dams, under the high heads involved and in the large volumes required by the irrigation demand. Major advances have also been made by Federal Reclamation engineers in methods of analyzing stresses in arch dams.

• The Bureau of Reclamation recently removed a 480-ton concrete cap of an abandoned bridge pier below Grand Coulee Dam to permit freer flow of the Columbia River and give tugs and barges unobstructed passage in dredging work. Left: Drillers sink holes into the eight-foot thick concrete preparatory to the placing of 650 lbs. of dynamite. Right: The pillar disintegrates under the detonation. Sheet piling, driven into the river bed to form the crib for a gravel ballast and to help support the concrete cap, was pulled later by barge-mounted derricks. The two flanking piers will not be removed.
Bureau of Reclamation Photos

Summaries of Bureau of Reclamation construction results by individual projects follow:

Boise Project (Idaho)

1,320 miles of canal, 407.4 miles of waste water ditches and drains, 13 tunnels having a combined length of 13,262 feet, 33,451 canal structures, 1,696 bridges, 1,247 culverts, 230,544 feet of pipe, 767 flumes, 402.6 miles of road, 335 miles of telephone line, 1 pumping plant, 2 powerplants, 42,581,579 cu. yds. of material excavated, 880,797 cu. yds. of concrete poured, and 792,893 barrels of cement used.

Owyhee Project (Oregon-Idaho)

548 miles of canal, 107.1 miles of waste water ditches and drains, ten tunnels having a combined length of 52,612 feet, 9,841 canal structures, 266 bridges, 877 culverts, 263,953 feet of pipe, 144 flumes, 158.44 miles of road, 80.85 miles of telephone line, six pumping plants, 14,955,488 cu. yds. of material excavated, 698,176 cu. yds. of concrete poured, and 903,947 barrels of cement used.

Umatilla Project (Oregon)

192.8 miles of canal, 15.9 miles of waste water ditches and drains, 3 tunnels having a combined length of 922 feet, 1,788 canal structures, 85 bridges, 14 culverts, 294,134 feet of pipe, 25 flumes, 29.1 miles of telephone line, 4,205,042 cu. yds. of material excavated, 125,455 cu. yds. of concrete poured, and 179,986 barrels of cement used.

Minidoka Project and Snake River Districts (Idaho)

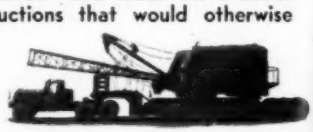
777 miles of canal, 181.6 miles of waste water ditches and drains, one tunnel 824 feet long, 9,844 canal structures, 463 bridges, 1,451 culverts, 187,813 feet of pipe, 280 flumes, 74.8 miles of road, 137.4 miles of telephone line, 20 pumping plants, one powerplant, 22,743,316 cu. yds. of material excavated, 284,463 cu. yds. of concrete

A Thoroughly Proven Type

of ROGERS HEAVY DUTY TRAILERS gains wider acceptance

MANY riggers and contractors are solving low headroom problems with this distinctive Rogers Girder Type Trailer.

Road clearance is reduced to a minimum—loading and unloading are simplified—and loads move under bridges and low obstructions that would otherwise necessitate long detours and costly delays.



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EXPERIENCE Builds 'em PERFORMANCE Sells 'em

Electricity

Models range from 350 to 35,000 watts, A. C. types from 115 to 660 volts, 50, 60, 180 cycles, single or three-phase and 400, 500 and 800 cycles, single phase. D. C. types from 6 to 4000 volts. Also available in dual voltage and special frequency types.

ONAN ELECTRIC PLANTS

For Excavating and Contracting Work

Onan Electric Generating Plants supply reliable, economical electrical service for excavating and contracting uses as well as for scores of other general applications.

Driven by Onan-built, 4-cycle gasoline engines, these power units are of single-unit, compact design and sturdy construction. Suitable for mobile, stationary or emergency service.

Model shown is from W2C series; 2000 to 3500 watts; powered by Onan-built, two cylinder, water-cooled engine.

D. W. ONAN AND SONS
3295 Royalston Ave.
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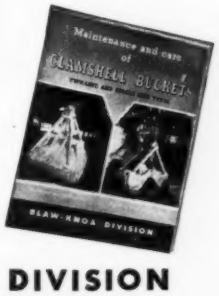
Write For Folder 690-A describing complete Onan Line

BLAW-KNOX BUCKETS

doing more work with less crane time on every kind of job that requires a bucket—from dredging in Florida to removing rubble in devastated, war-torn cities. The chief reason for the world-wide popularity of Blaw-Knox Buckets is that the line is *complete.* You can specify—and get—exactly the right bucket for the job in question.

Over 100 types and sizes of BLAW-KNOX BUCKETS are described in our illustrated Catalog No. 1757 . . . send for your copy today.



MAKE 'EM LAST
Bulletin 2004 gives complete instructions on the care and maintenance of Clamshell Buckets . . . A copy on request.

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LINN HAFTRAK
SINCE 1916

Low Cost Per Ton-Mile • Manganese Tracks • Contour-following Traction
Sturdy Construction
5 to 50 Tons Capacity
Negotiates Steep Grades, Mud, Snow and Ice

For

Mining • Quarrying • Logging • Snow Plowing • Dam, Highway, Airport and Oil Field Work

The Linn Manufacturing Corporation
Morris, New York
Designers and Builders of OFF-THE-HIGHWAY Vehicles

• Bucyrus - Erie bulldozer being used to pull debris away from an oil well fire at West Edmond, Oklahoma, so that fire fighters can attack the flame without interference.

Press Association Photo

poured, and 328,202 barrels of cement used.

Vale Project (Oregon)

202 miles of canal, 115 miles of waste water ditches and drains, six tunnels having a combined length of 9,782 feet, 3,217 canal structures, 276 bridges, 699 culverts, 65,610 feet of pipe, 95 flumes, 283 miles of road, 89 miles of telephone line, 8,767,371 cu. yds. of material excavated, 36,001 cu. yds. of concrete poured, and 62,772 barrels of cement used.

Burnt River Project (Oregon)

One bridge, 388 feet of pipe, 189,105 cu. yds. of material excavated, 4,865 cu. yds. of concrete poured, and 10,812 barrels of cement used.

Okanogan Project (Washington)

86.25 miles of canal, one mile of waste water ditches and drains, one tunnel 395 feet long, 2,304 canal structures, 50 bridges, 16 culverts, 196,053 feet of pipe, eight flumes, 4.5 miles of roads, 39 miles of telephone line, six pumping plants, 963,575 cu. yds. of material excavated, 15,030 cu. yds. of concrete poured, and 20,777 barrels of cement used.

Columbia Basin Project (Washington)

2.92 miles of waste water ditches and drains, 27 tunnels having a combined length of 12,615 feet, 17 bridges, 181 culverts, 239,738 feet of pipe, 935 miles of road, two powerplants, 26,768,040 cu. yds. of material excavated, 10,706,992 cu. yds. of concrete poured, and 11,732,891 barrels of cement used.

Deschutes Project (Oregon)

528.9 miles of canal, two tunnels having a combined length of 6,804 feet, 74 canal structures, 16 bridges, 15 culverts, 6,359 feet of pipe, 16 flumes, 63 miles of road, eight miles of telephone line, 4,937,102 cu. yds. of material excavated, 22,675 cu. yds. of concrete poured, and 36,755 barrels of cement used.

Yakima Project (Washington)

1,548.02 miles of canal, 47.74 miles of waste water ditches and drains, 24 tunnels having a combined length of 56,597 feet, 20,045 canal structures, 572 bridges, 769 culverts, 1,796,603 feet of pipe, 1,172 flumes, 128.09 miles of road. 402.9 miles of telephone line, 11 pumping plants, four powerplants, 25,540,927 cu. yds. of material excavated, 581,885 cu. yds. of concrete poured, and 819,485 barrels of cement used.

Barrett Director of New Construction Men's Group

Fred Barrett, head of the Export Record Unit of E. B. Badger & Sons Co. of New York City was recently elected a director of the Construction Men's Association, an organization developed about 18 months ago to disseminate accurate job information, both foreign and domestic, to its members. The purpose is to shorten time lost between jobs, a heretofore necessary evil inherent in the construction business.

Present membership of about 3400 throughout the world represent all branches of the construction industry and include many shovel operators, mechanics, builders, foremen, engineers, and administrative officers.

The Construction Men's Association is a non-profit organization with offices at 82 Beaver St., New York City.

Erect Observation Post for New Jersey Bridge Job

Realizing the public interest in construction projects, especially in centers of large population, Senior and Palmer, Inc., of New York City, with the cooperation of Spencer Miller, Jr., New Jersey State Highway Commissioner, set up an observation post for the public at The William A. Stickel Memorial Bridge Foundation project being built for the New Jersey State Highway Department. Borrowing a name from the popular Sidewalk Superintendents' Clubs, it has been christened "The Riverside Superintendents' Club".

This bridge is part of an improvement to facilitate highway traffic across Passaic River serving the metropolitan area between Newark and Jersey City, and between Route 25 and the Belleville Turnpike. Upon its completion it will replace the existing Bridge Street bridge.

The bridge span, for which those

Peace in 55 years?

Here's a fight that's far from over—against tuberculosis, the dread plague that still kills more Americans between 15 and 45 than any other disease.

Your annual purchase of Christmas Seals since 1904 has helped cut the TB death rate 75%! And TB *can* be wiped out — some authorities say by the year 2000.

Yet wartime conditions give TB a new lease on life—*human life.*

So please, *help us bring up the reserves.* This year, buy *extra* Christmas Seals. Remember, *there can be no peace treaty with tuberculosis.*

BUY CHRISTMAS SEALS

Because of the importance of the above message, this space has been contributed by

Excavating Engineer

Engineered for Punishment!

● Building heavy-duty Off-the-Road Tires under war conditions . . . to do the same jobs as pre-war tires . . . developed and *proved* a new method of tire engineering at General.

"Shock Absorber" construction, General named it, because tire casings built this way stop shock concentrations . . . distribute heavy service loads and stresses uniformly . . . preserve the tire carcass for longer *original* service . . . more *recap* service.

More than just engineering excellence . . . General Off-the-Road Tires give you Top-Quality . . . stemming from quality control that extends from their own rubber and cord mills through to the finished tire. Generals are the tires delivering the lowest cost tire performance today!

THE GENERAL TIRE & RUBBER CO.
Akron, Ohio

GENERAL DEEP CLEAT

GENERAL ROCK SPECIAL

The **GENERAL TIRE**

GENERAL *OFF-THE-ROAD* TIRES

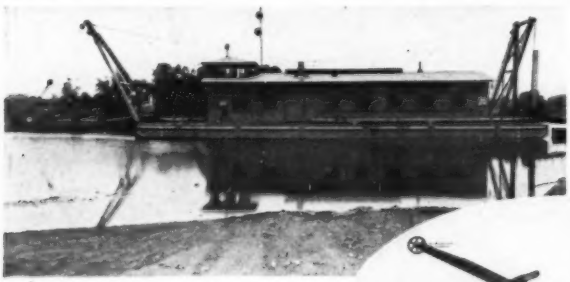
• Service road near Bloomington, Ill., which will be black-topped is being given a finish grading by a Caterpillar diesel No. 12 motor grader. The road skirts new Ill. U. S. Highway 61 for the convenience of Bloomington residents.

foundations are being constructed by Senior and Palmer, Inc., will be a vertical lift type having a clear span between fenders of 200 ft., a vertical clearance in the closed position at mean high water of 35 ft. and a vertical clearance in the fully open position of 135 ft. The bridge will provide two roadways, each 38 ft. wide, separated by a four-ft. median strip. There will also be provided two sidewalks about 6'8" wide.

The foundations are being built by the pneumatic caisson method.

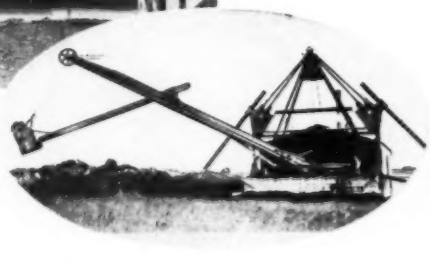
Complete Dredges

HYDRAULIC • DIPPER • CLAMSHELL



HYDRAULIC DREDGES

Sizes 8" to 15"



DIPPER and CLAMSHELL

¾ cu. yd. up

BOLTED SECTIONAL STEEL CONSTRUCTION

Every ASD dredge is designed as a complete, integrated unit for economical performance. Backed by 40 years of dredge building experience, these units are cutting yardage costs on many different projects—canals, harbors, channel improvements, drainage, sand, gravel, fills, ore recovery and other jobs.

Patented, bolted sectional steel hulls, all machinery and accessories are shipped by rail, truck or as hold cargo for assembly at site of use. May be dismantled, shipped and reassembled at remote inland locations.

Write for catalog, photos and data sheets.

Place your order NOW for early delivery.

AMERICAN STEEL DREDGE CO. INC.
FORT WAYNE 1 • INDIANA • U.S.A.

Tractor Equipment Group Meets on Surplus Problems

The Allied Tractor Equipment Manufacturers Industry Advisory Committee of the Surplus Property Board recently met in Washington, D. C., to discuss the marketing and pricing of surplus items allied to their particular industry.

Members of the committee are: Arthur C. Berg, Manager, Tractor Equipment Division, Gar Wood Industries, Inc., Detroit, Michigan; P. H. Birckhead, Vice President, Bucyrus-Erie Company, South Milwaukee, Wisconsin; Charles L. Bowler, Gen. Sales Mgr., Linn Mfg. Corporation, Morris, New York; Eugene Caldwell, Vice President, Hyster Company, Peoria Illinois; V. C. Crane, Vice President, The Baker Mfg. Company, Springfield, Illinois; Henry Gusman, President, Wooldridge Mfg. Company, Sunnyvale, California; D. F. Hipskind, Vice President in Charge of Sales, Athey Truss Wheel Company, Chicago, Illinois; F. T. Isaacson, Vice President, Isaacson Iron Works, Seattle, Washington; Roy McCluskey, Asst. Treasurer, R. G. LeTourneau, Inc., Peoria, Illinois; F. H. Moline, Tractor Equipment Division, Pacific Car & Foundry Company, Renton, Washington; S. L. Myers, Vice President, LaPlant-Choate Mfg. Company, Cedar Rapids, Iowa.

The committee unanimously recommended that surplus tractors be sold with attachment equipment and that since the rebuilding of obsolete machines would be costly and impractical all obsolete equipment should be scrapped.

Because the method of procurement adopted by the Armed Forces as a protective measure has created an excess quantity of parts for surplus disposal part stocks are extremely unbalanced and the committee recommended that each manufacturer purchase all of its own parts on an equitable basis.

Government Restrictions on Explosives are Relaxed

Wartime Federal regulations governing non-military explosives and certain ingredients of explosives are being relaxed and individual licenses no longer are required for transactions in explosives, Dr. R. R. Sayers, Director of the Bureau of Mines, announced.

One of the most important homefront emergency security measures in effect since the declaration of war by the United States on December 8, 1941, the Federal Explosives Act, is no longer necessary as a wartime measure and the Explosives Control Division of the Bureau's Health and Safety Branch, which administered the Act during the war, is being liquidated, Dr. Sayers said.

The publication of a "general license" by the Department of the Interior (Federal Register, October 9, 1945, pages 1267 and 1268) automatically re-

• Unloading a Bucyrus - Erie 38-B 1½-cu. yd. shovel at the Homestead Coal Mine in Kentucky.

lieves thousands of individuals and organizations dealing in explosives or their ingredients from the necessity of having individual licenses and suspends the authority of the Bureau's more than 3,800 volunteer licensing agents to issue licenses.

In nearly four years, these volunteer licensing agents, serving without Federal pay other than nominal licensing fees, have issued or reissued nearly 800,000 licenses, including annual renewals, in the 48 States and Alaska, authorizing more than 300,000 persons or organizations to engage in transactions involving explosives for non-military use.

Placed in effect during 1917 as a war measure and revised on December 26, 1941 after becoming automatically operative on December 8, 1941, upon the declaration of war, the Federal Explosives Act was designed to maintain strict control over non-military explosives and certain of their ingredients and to prevent blasting materials from reaching the hands of persons hostile or disloyal to the United States or persons who were not reliable or experienced in the use of explosives.

Hundreds of millions of pounds of explosives have been used by American industries since Pearl Harbor, but so effective has been the control over the handling of blasting materials that not a single clear-cut case of sabotage involving them has been reported to the Bureau, Dr. Sayers said. This is in marked contrast to what occurred in World War I when there were numerous cases of sabotage with attendant heavy loss of life and property involving explosives in this country.

Although heavy penalties were provided for violations of the act or its regulations and many thousands of violations occurred only 54 licenses were revoked in nearly four years, and the majority of these revocations were attributed to ignorance of the provisions of the act and its regulations. The administration of the act brought about thousands of improvements in the transportation, storage, and use of explosives and these improvements were made in every state in the Union as well as in Alaska. The more than 300,000 license-holders in the United States and Alaska included manufacturers, vendors, purchasers, analysts, educators, inventors, investigators, foremen, and other users, excepting those workmen, such as coal miners, who obtained their explosives from licensed foremen.

The general or blanket license issued by the Department will remain in effect until revoked by the Director of the Bureau of Mines or when the Federal Explosives Act and the regulations are of no further force or effect by Congressional Act or Presidential Proclamation or other procedure.

Nebraska Has $7,000,000 To Match Federal Funds

Nebraska will be able to match about $7,000,000 of the approximately $8,000,000 of federal highway aid that will be available to the state next year, it was predicted by State Engineer Wardner Scott.

Scott said the Nebraska Highway Department will hold the first letting of contracts in January for its postwar construction program. "It is too late for us to do anything this fall," he said. The department expects to place about $13,500,000 of road work under contract in 1946.

Hundred Million in Public Works Planned by N. J.

Public works construction costing more than $100,000,000 and requiring 4,000,000 man-days of labor has been planned by New Jersey municipalities, counties and school districts, it was disclosed by State Economic Development Commissioner Charles R. Erdman, Jr.

Commissioner Erdman's estimate was based on a survey made by the department's Division of Planning and Engineering under supervision of its director, William T. Vanderlipp. Purpose of the survey was to learn the size and time of public works programs in the state so that they could be studied in relation to expected demand for construction materials.

Vanderlipp explained the survey report was not to be considered a list of project plans and public improvements to be immediately submitted for bids on the open market.

"Some," he said, "are not scheduled

(Continued on page 640)

MEMO
TO ALL CONSTRUCTION SUPTS.:—
Have we been taking "BUCKETS" too much for granted?
What about HAISS high power ratio 7:1
J.J.B.
For Catalogs, Prices, Deliveries Write or Wire
HAISS
HI-POWER BUCKETS
GEORGE HAISS MANUFACTURING CO., Inc., 144th St. & Park Ave., New York 51, N. Y.

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Fully Convertible

Shovels
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- Hook rollers (no center pin)
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- Oil-enclosed gears
- Field-developed dippers and buckets

UT, Mr. Contractor?

Many a contractor has found in Bucyrus-Erie ⅜- to 2½-yard excavators the difference between just "getting by", and making substantial profits . . . has found that adding Bucyrus-Eries to his equipment is increasing output to such an extent that profits are multiplied. The reasons are many, the explanation simple: Because all Bucyrus-Eries are individually designed for their ranges of work, every model produces the speedy operating cycle that does the most efficient digging or lifting job. Machinery is simple, parts large, few in number. Widespread use of anti-friction bearings makes power transmission smooth. Simple construction provides strength without excess weight. Check the list of other outstanding features (bottom, left) and look over the machines illustrated. Bucyrus-Eries are designed by engineers who thoroughly understand your field problems, built by craftsmen who know how to build into each machine the output "tangibles" you need, and backed by sixty-five years of manufacturing experience. Ask your Bucyrus-Erie distributor for complete details.

Bucyrus-Erie Company

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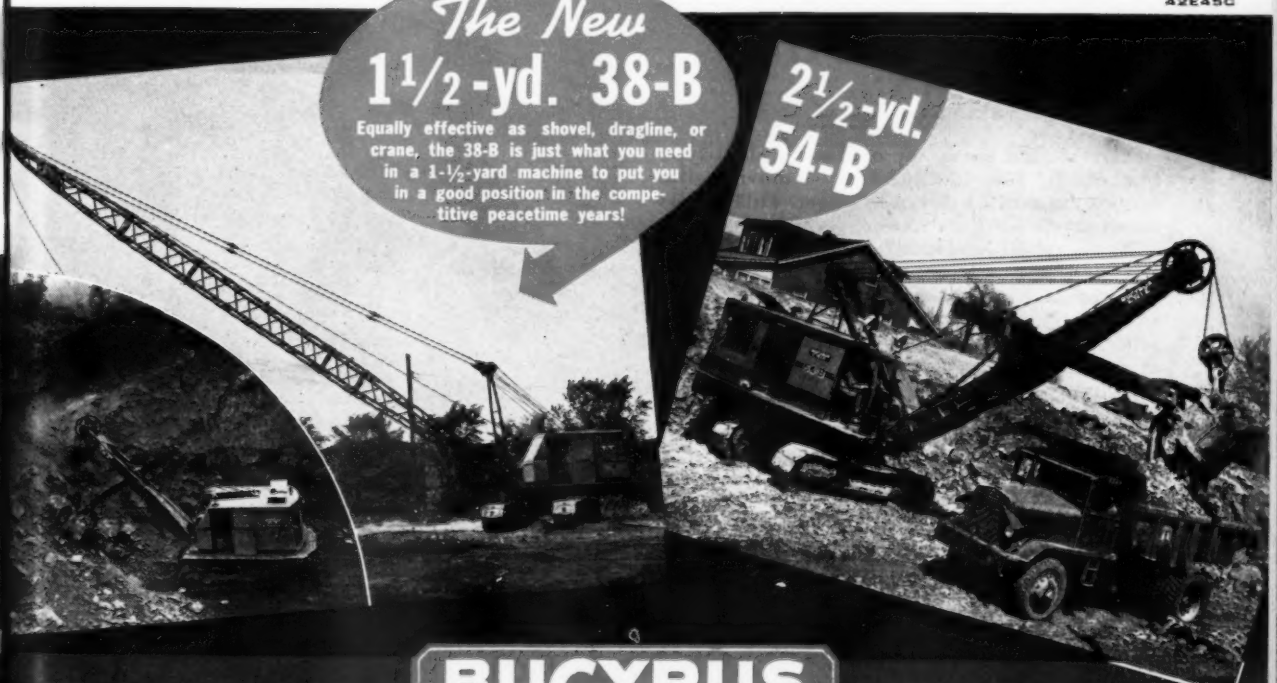

The New
1½-yd. 38-B
Equally effective as shovel, dragline, or crane, the 38-B is just what you need in a 1-½-yard machine to put you in a good position in the competitive peacetime years!
2½-yd. 54-B

BUCYRUS ERIE

SOUTH MILWAUKEE, WISCONSIN

• Six-wheel diesel tractor and specially built Fruehauf trailer used by J. B. & R. E. Walker, Inc. of Salt Lake City for transporting equipment on Provo River irrigation job. The 24,000-gal. gasoline tank is being moved for gasoline storage. A tractor shovel is mounting the trailer.

Shots from the Firing Line

(Continued from page 637)

to begin for more than two years. However, it does give manufacturers and local industries information of value to them in their own postwar reconversion plans."

The survey included those projects approved by the state to receive state aid, projects pending and likely to be approved and projects which will receive no aid from the state but which will be carried out by local government independently.

Arkansas Expects to Match Federal Aid Funds

If highway revenues return to their prewar level, Arkansas should be able to match the full amount of its federal-aid allocation of more than $7,000,000 annually for a three-year highway construction program, according to State Highway Director J. C. Baker.

Pointing out that the state has a little more than $7,000,000 available for matching, Baker said that this amount, which accumulated during the war, will be increased by 1945-46-47 highway revenues to be used in matching the total allocation.

"Gasoline tax and automobile license revenues, which fell off during the war, are expected to increase to the prewar level since rationing and other restrictions have been lifted," Baker declared. "September collections indicated that this will be true. If so, we should derive sufficient revenues during 1945 and the following two years to build up our fund to the extent necessary to match the full amount of federal funds available."

Organize Surplus Disposal Job for Maximum Efficiency

The Office of the Army-Navy Liquidation Commissioner has been streamlined into three major groups to obtain maximum efficiency in the complex job of disposal of overseas war surplus.

While the actual disposal of surplus items overseas will be handled directly by the field commissioners and their staffs in the various theaters, overall directives, planning and administration fall under the three groups in Washington — the Field Service Group, the

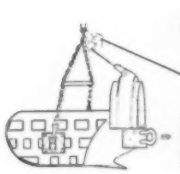
Your "Double-Duty Dirt Digger"

That's what users say of Yaun's shell type bucket. It does double-duty — moving the largest amount of dirt at less cost. This means more profit for the dragline owner.

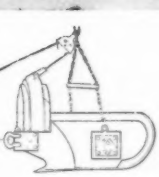
Yaun's shell bucket is lighter than the usual bucket of this type. It is equipped with Amsco manganese tooth bases with removable tooth points. They are sharp cutting, correctly angled for fast digging. The entire bucket is designed for good balance, smooth carrying, and clean dumping. The interior is curved and smooth.

These features mean more cycles per hour, more dirt per cycle, and more profit per day. Investigate Yaun buckets for your next job.

Two Types of All-Welded Buckets.



YAUN
DRAGLINE BUCKETS
Patented
BATON ROUGE, LA.



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2 unusual hydraulic presses

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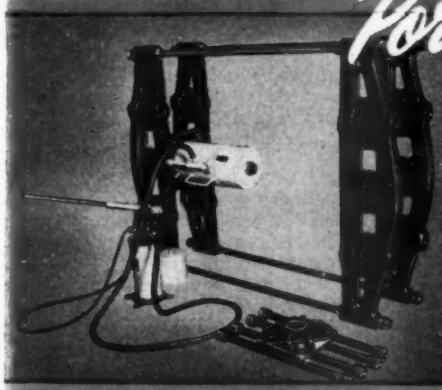
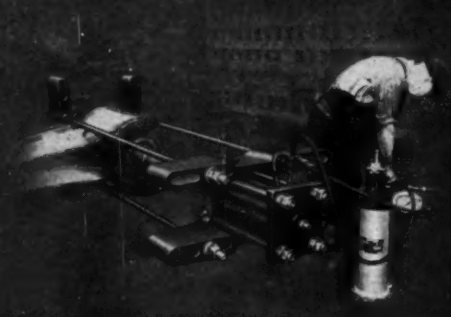
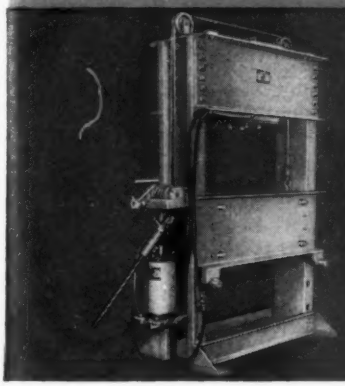


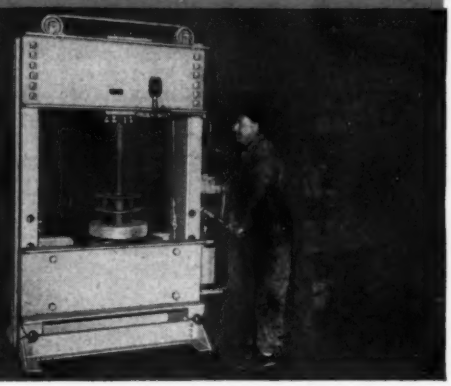
Left: Here is a Rodgers 200 ton Universal with back plate and rods shown beside it. At right is a Rodgers Universal mounted around a large pitman to pull the shaft. Real power—easy to use!



RODGERS *Flexible* SHOP PRESS



Left: A Rodgers 100 ton Shop Press—study its simplicity — note pins below bed for increasing opening —hand pump mounted on side. Right: A bushing is easily pressed into a sheave with a few strokes of the hand pump.



STOP and think of all the uses you can find for these versatile Rodgers Presses — pulling gears, pinions and wheels; pressing shafts, bushings and pins, squeezing, clamping and jacking operations —wherever you need 50 to 200 tons of easily-applied hydraulic power.

The Rodgers Universal is a unique portable unit for field or shop service. It is used on a stand as an ordinary press, on its side or flat and is easily assembled around equipment for special operations. Rodgers Hydraulic Hand Pump or Power Pump supplies power.

A Rodgers Shop Press is a flexible unit with a bed that is easily raised or lowered to accommodate various size work. Cylinder may be adjusted across entire width of bed. Rodgers Hand Pump or Power Pump furnishes pressure.

If you have equipment to service you can save yourself hours of time and labor with a Rodgers—they often pay for themselves on a tough job or two. Write for *all* the details. It will be profitable.

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It will give you complete information on Rodgers Hydraulic Presses. No obligation, of course. Write today.

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hydraulic power equipment

Shop Presses

Crawler-Track Presses

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Power Pump Units

Portable Presses

• Giant dams and power plants constructed by the Bureau of Reclamation will be used as "textbooks" by 25 young Chinese engineers. Six members of the group, recently arrived from China, are being shown a model of one of Boulder Dam's four mammoth intake towers by Assistant Commissioner of Reclamation Kenneth Markwell. This group will join 19 others for training at the Denver office of the Bureau for a study tour of Reclamation projects in the west.

Planning Group and the Administrative Operations Group.

To facilitate operations, these three groups have been further divided into 12 divisions operating under the commissioner's office.

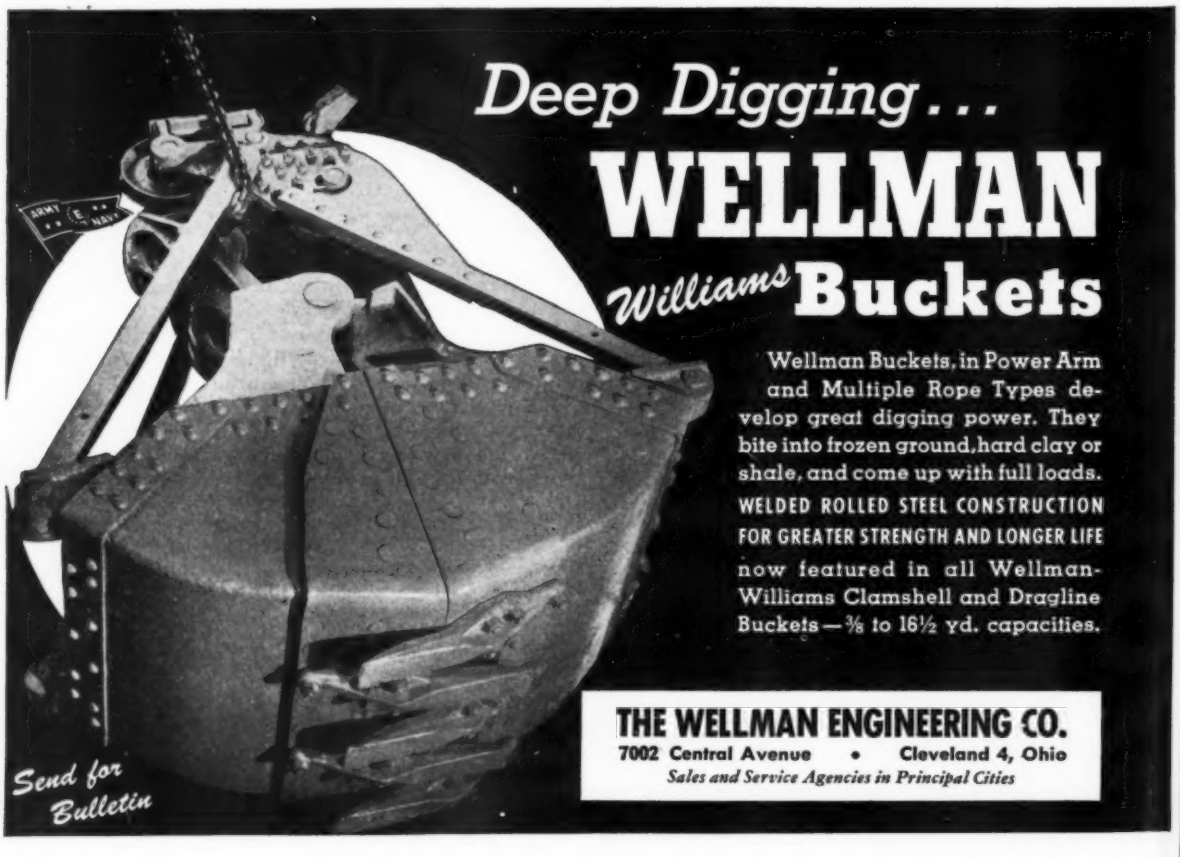
The four divisions in Field Service are charged with general direction of disposal of overseas war surplus; the three divisions of Planning are charged with outlining general plans and programs for disposal; and the five groups under Administrative Operations are responsible for various phases of direct administration.

The divisions of the Field Service Group, each of which is charged with supervision of disposal of one category of surplus, are the Equipment Division, the Consumer Goods Division, the Aircraft Division and the Fixed Installations Division.

Assisted by them, Commissioner Thomas B. McCabe in Washington and his Field Commissioners and Deputies in the various theaters will dispose of overseas war surpluses and residue which eventually will total some 4,000,000 separate items.

Heading the Field Service Group, with the title of Assistant Executive Officer to the Commissioner is Captain William L. Nelson, USNR, Philadelphia financier and banker. He was president of the Delaware Fund and a partner in Barringer, Nelson and Hyde, Philadelphia investment advisors, prior to entering the Navy early in the war.

Before his present assignment with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Wellman Buckets, in Power Arm and Multiple Rope Types develop great digging power. They bite into frozen ground, hard clay or shale, and come up with full loads.
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now featured in all Wellman-Williams Clamshell and Dragline Buckets—⅜ to 16½ yd. capacities.
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REXALOY Electrodes have the following properties and characteristics:

1. Made in sizes ⅛", 5⁄32", 3⁄16", and ¼".

2. Operate equally well on either A. C. or D. C. machines, in all positions.

3. Are not affected by moisture to the extent that they are not usable, but, after drying, will perform as formerly.

4. Deposits can be forged and heat treated.

5. The coating is metallic, and becomes a part of the overlay, which means freedom from slag or scale.

6. Deposits have a Brinell hardness rating of 300 to 687, depending on the base metal on which deposited.

7. Designed on the principle that toughness is a desirable property, REXALOY electrodes will not become brittle after application, but will retain, within a few points, their original hardness throughout their use.

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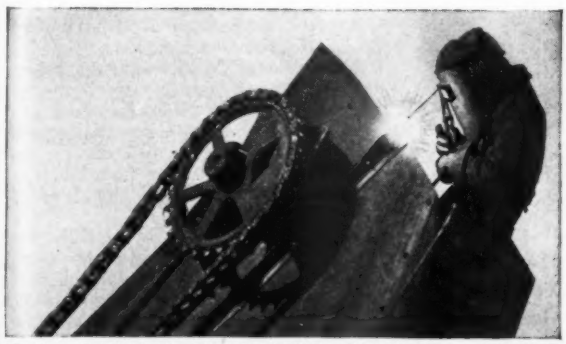

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Take advantage of the time, money and machinery saving benefits of arc welding! Use P&H Welding Electrodes for the repair and maintenance of your equipment . . . to keep it on the job longer . . . to avoid lengthy lay ups for want of replacement parts. Often a few hours of welding time saves days.

Whatever your welding requirements—P&H can supply you. There are all types and sizes—AC or DC—for welding all kinds of steels and for building up and hard-surfacing to provide unusual resistance to wear, impact and abrasion.

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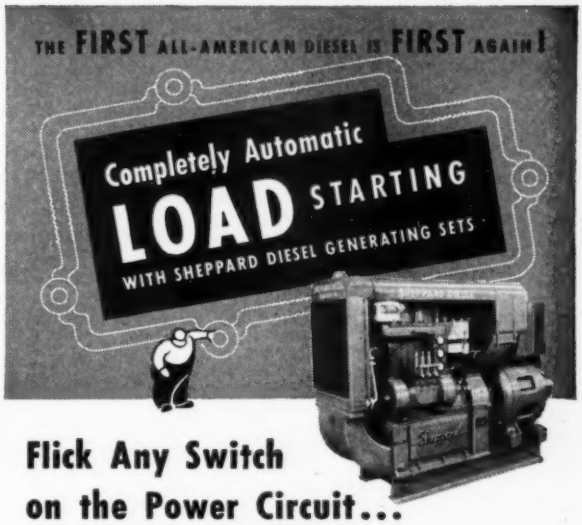
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Completely Automatic
LOAD STARTING
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Flick Any Switch on the Power Circuit... LOAD-CONTROL Does the Rest!

LOAD-CONTROL . . . the fully automatic *LOAD* starting and stopping of Sheppard Diesel Generating Sets . . . makes it possible for operators to realize still greater power-cost savings than they are now enjoying. Because Sheppard LOAD-CONTROL cuts operating time of the power plant to periods when power is actually required, it reduces fuel consumption and prolongs the life of equipment.

LOAD-CONTROL is exactly what its name implies. The load demand on the power circuit controls the starting and stopping of the power source. The term—"automatic starting and stopping"—has been loosely applied to other control systems. However, these have been merely remote station control by a manual or thermostatic switch.

The flick of any lighting or appliance switch on an electrical circuit supplied by a Sheppard Diesel Generating Set equipped with LOAD-CONTROL will automatically start the generator. Power is instantly available. Turn off the switch and LOAD-CONTROL immediately stops the power plant.

Sheppard LOAD-CONTROL requires no special wiring. Simply connect to present service leads. Available with any single or 3 phase AC Sheppard Diesel Generating Set. Mail coupon today for complete information about this exclusive Sheppard feature.

Sheppard Diesel Units are also available with:
Remote station control from manual, thermostatic or similar type switch.
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Generating Sets—3 to 36 KW • Marine Engines—8 to 62 HP
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Load-Control THE PHANTOM ENGINEER

• Backfilling a portion of the 14,000 ft. Compton sewer job in Los Angeles being done by R. & J. Artukovich of that city with a Bucyrus-Erie Dozer-Shovel with bulldozer blade mounted on an International TD-9 tractor.

ANLC he served as chief supply officer at Oran, Algeria, and at the Philadelphia Navy Yard.

The Planning Group is headed by Colonel Davidson, another of the three Assistant Executive Officers. Colonel Davidson, an engineer of Fort Worth, Texas, was with various Army engineering projects in Texas before entering active service in 1940.

He served with the Corps of Engineers at Fort Knox, Ky., and in various key posts in the European theater including the SHAEF staff before coming to ANLC. Colonel Davidson was holder of the Rockefeller Foundation Scholarship in 1930-31, and holds the Bronze Star Decoration.

The Administrative Operations Group, which comprises five divisions, is headed by Colonel A. H. Martin, also an Assistant Executive Officer. Colonel Martin, of Denver, Colo., and Washington, previously served as Acting Field Commissioner for the India-Burma theater. He won the Legion of Merit and the Order of Kutuzov, second highest Russian decoration for expediting material shipment to Russia while serving in the Persian Gulf Command.

A veteran of the Mexican Border Campaign and World War I, Colonel Martin was recalled to active duty in 1942. He previously had been executive assistant to the Public Works Administrator and national director of the marketing law survey for the Department of Commerce.

The Equipment Division, headed by Lt. Col. John F. Troja, exercises general policy supervision over disposal of the thousands of different items of equipment which it took to win the war, and which for that very reason now are surplus.

Because of the urgent need for reconstruction in various areas of the world, and because much of the equipment is adaptable to reconstruction and rehabilitation, the problem of disposal of surplus equipment is much more complicated than merely offering it to the highest bidder under the ANLC priority policy.

To answer the many questions which constantly arise in various theaters as to means of surplus disposal, the Equipment Division is aided by information and advice from Industry and Labor Advisory Committees, Army and Navy technical services and other U. S. government agencies concerned.

Colonel Troja and his staff must answer all questions directly concerned with disposal of surplus equipment, approve disposal plans for certain categories of property which the Field Commissioner may not dispose of without reference to the Washington office, and furnish general information and policies to the Field Commissioners.

Among the many problems facing the Equipment Division are the facts that surplus equipment on hand is constantly being augmented by new declarations of the Army and Navy, that various countries have widely varying regulations concerning surplus disposal, and that demand for various types of surplus equipment change rapidly with conditions.

Colonel Troja, a native of Fort Madison, Iowa, was with the Standard Oil Company and the Arabian American Oil Company before entering the Army. He has had wide experience in handling equipment of all types.

A graduate of the University of Arizona, he went to Saudi, Arabia with the Arabian American Oil Company on refinery construction. While there he was called to active duty in the Army in 1942, and served in the Persian Gulf Command until early this year.

AED Submits Names For Surplus Property Board

Associated Equipment Distributors (A.E.D.), submitted to the Surplus Property Board the names of seven outstanding and geographically representative distributors of construction and road building machinery and equipment, as nominees for an Industry Advisory Committee to the Board in distribution of surpluses of this type of machinery and equipment.

The names selected by A.E.D. and recommended to the Board on the basis of recommendations from officials of A.E.D.'s regional areas throughout the country are: G. H. Jamison, A. H. Cox & Company, Seattle, Washington; George Gagel, Machinery & Supplies Company, Kansas City, Missouri; William Nosman, Coast Equipment Company, San Francisco, California; John H. Gorman, Tractors, Incorporated, Providence, Rhode Island; D. U. Rakestraw, Contractors' Equipment & Supply Co., Albuquerque, New Mexico; William T. Walsh, W. T. Walsh Equipment Company, Cleveland, Ohio, and Albert E. Hahnan, Tractor & Machinery Company, Inc., Atlanta, Georgia.

At a recent meeting in Washington of A.E.D.'s Committee on Disposal of Government Surplus, W. A. Danner, of Boston, Chairman, stated that the question of how much new and used construction and roadbuilding machinery is to be declared surplus cannot be determined until the Army and Navy, par-

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HE SELLS more International TracTracTors than anybody we know! He runs them, handles the controls—knows, first hand, what International Crawler performance means.

And he's not backward about saying what he thinks about his power-packed prime mover, good or bad.

Find him where the tough, grubby jobs are getting done—on highway, airport and construction projects—at mill yards or with municipal crews. And listen!

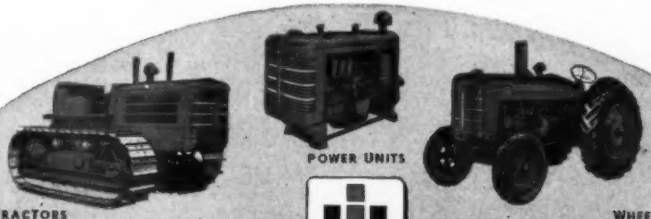
Hear him tell what *his* International can do, how it pays off in lower costs on every job, how he can beat the other fellow with it in climbing, turning, digging, carrying and hauling.

And the outfit he works for backs him up with statements like this: *"It's a powerful tractor with all the speed and dependability we need. This is our first experience with International Power and we are thoroughly pleased with our choice." "Cheapest fuel cost and maintenance we have ever experienced."*

International Industrial Power Distributors have all information about International Diesel and carburetor-type TracTracTors, Wheel Tractors and Power Units. For help in selecting the size and type of power equipment that will serve you best, talk with the distributor near you.

Dependable after-sale service is provided all owners of Internationals by distributors and dealer organizations that span the continent and circle the globe. Factory replacement parts and equipment built for use with International Tractors and Power Units are available through these organizations. This assures maximum value and long term benefits for owners and operators everywhere.

Industrial Power Division
INTERNATIONAL HARVESTER COMPANY
180 North Michigan Avenue — Chicago 1, Illinois



INTERNATIONAL — INTERNATIONAL HARVESTER — **Industrial Power**

• Two 30 inch steel discharge pipes which join a woodstave pipe which, in turn, empties into this open canal system on the Post Falls Unit of the Rathdrum Prairie Project of the Bureau of Reclamation in northwestern Idaho.
Bureau of Reclamation Photo

ticularly the Army, decide how much of this type of surplus should be retained for peace-time use, and that if the service branches request that substantial quantities of certain items in this category be retained for peace-time use, the total quantity to be sold as surplus may not be as great as has been anticipated.

Following conferences with officials of the Surplus Property Board, Danner's Committee voted to recommend to the Office of Surplus Property:

(1) That the Department of Commerce carry on a national paid advertising program concerning all surplus property sales in newspapers in the various regions.

(2) Continuance of the present method of spot sales rather than fixed price or negotiated sales on new and used equipment.

(3) That, in consideration of expected enormous quantities of parts to be declared surplus, many of which are slow moving, and because of the necessity of providing continued employment as a means of protecting the nation's economy, manufacturers should be offered and urged to acquire new parts for disposal through regular distributive channels; and, further, that the government take whatever steps possible to protect the manufacturer and distributor from exploitation by groups or individuals not regularly engaged in the manufacture or distribution of construction machinery.

ARBA Head Discusses Road Building Plans

Now that Congress has given the green light to the postwar highway construction program by passing its concurrent resolution that the war emergency has been relieved as provided in the act, over a billion dollars will be available for road building in the fiscal year ending June 30, 1946. In an interview on the effect of this action, James J. Skelly, president of the American Road Builders' Association said, "Reconstruction and relocation will play important parts in our early activities. While thousands of miles of new highways are needed, immediate attention must be paid to the obsolescent mileage that has been piling up for years until it has reached staggering figures.

"The year before we entered the war, it was estimated that 3½ billion dollars would be required to rebuild, widen or relocate 106,560 miles of highways that had become obsolete," the road builders' leader asserted. "Added to this was an additional half billion for widening or rebuilding 21,682 bridges. Since there has been practically no new road building and very haphazard maintenance in the past five years, it is now estimated that obsolescence has grown to twice that huge figure."

President Skelly pointed out that road building should be regarded as a long range, continuous job that would continue for many years. As to the immediate future, he estimated that close to 1,000,000 men would be required in highway construction with 1,250,000 more engaged in producing and transporting materials and equipment.

Legislation Required in Maine on Road Fund

Although Maine has sufficient funds for participation in the first half of the federal-state postwar road building program, legislative action will be necessary to provide additional revenue for the remainder of the program, it was declared by Chairman Stillman E. Woodman of the State Highway Commission.

Maine's allotment of federal funds is

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Snow Plow and Ice Removal BLADES
A proven record of superior performance--the result of long experience and research devoted to developing a special steel capable of withstanding the severe conditions present in snow removal service.
MADE FOR ANY TYPE SNOW PLOW
Various widths, lengths, thicknesses--flat or curved--standard or special--punched ready to fit your machine.
SHUNK SAW-TOOTH ICE BLADE
Amazingly effective. Thoroughly breaks up and removes thick, slippery, or rutted ice and snow formations. Replaces all types and models of snow plow blades or maintenance units. No extra attachments.
Now is the time to order SHUNK Snow Plow and Ice Removal Blades--write for Bulletin and name of nearest distributor.
ALLIED EQUIPMENT DISTRIBUTORS ASSOCIATED MEMBER
Shunk MANUFACTURING COMPANY
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A Time-Saving ACCESSORY
Bulldog ROPE SOCKETS never fail. The harder the pull . . . the tighter the grip! Attachment is easy and quick and directly in line with pull, eliminating costly kinks. Made in dozen sizes and four different styles.
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HAYWARD BUCKETS
WON'T QUIT OR CAUSE TIME OUT
A Hayward Bucket keeps the job going ahead on scheduled time. It won't quit or cause time out.
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• **Clematis Brook Sand & Gravel Co. of Waltham, Mass., use a Bucyrus-Erie ¾-cu. yd. dragshovel to dig a sewer pipe trench at Dedham, Mass.**

xpected to be $3,913,509 for each of the three years covered by the federal-tate program. Woodman said that Maine has $5,870,264 available for matching the federal funds, or enough for the first half of the three-year program.

"For the last half of that three-year program," he added, "the legislature in 1947 must make provision for additional matching funds if Maine is to go along with the remainder of the program."

Ask $25,000,000 for Inter-American Highway

Twenty-five million dollars in Federal funds for the construction of the Inter-American Highway through the Central American Republics to the Canal Zone has been recommended by President Harry Truman.

Penn Sees Bright Future For Construction Industry

With the construction and roadbuilding machinery industry now practically free from various governmental restrictions, orders and directives, Hamilton O. Penn, President of Associated Equipment Distributors (A.E.D.) foresees an "unsurpassed construction era ahead of us which should guarantee 'full employment' in the true sense of a day's work for a day's pay providing we use our heads and do the job to be done in the American way, without interference from pseudo-economists, star-gazers and those whose idea of 'reconversion' is conversion to their own particular 'isms' and 'ideologies'."

Mr. Penn, addressing a group of construction and roadbuilding machinery distributors at the Statler Hotel, called attention to the fact that Construction Machinery Order L-192, and L-41-e imposing restrictions on road and highway construction machinery, and General Construction Order L-41 have been revoked and that only OPA Maximum Price Regulation 134 governing rental rates and MPR 136 fixing prices on retail sales remain as governmental controls affecting the industry.

"There should be nothing to hold us back from developing a program, in which construction of all kinds will play a predominant role, that will provide full employment for every able-bodied man in the country," declared Penn. "Our own industry, which provides channels of distribution for all machinery and equipment having to do with heavy construction, roadbuilding and highway construction, offers a gauge for measuring the potentialities of the tremendous construction job that lies ahead.

"The nation was way behind on its roadbuilding and highway construction program before the war; in fact, we haven't yet caught up with ourselves on roadbuilding and highway construction and upkeep and we won't for a long time, if ever.

"But, roadbuilding and highway construction is only one phase of construction as a whole. We need new roads and highways, not so much from the standpoint of providing jobs for the unemployed, but as a community and a national necessity. By the same token, millions of miles of railway roadbeds must be repaired and in many cases, re-laid entirely. Both the railways and public highways have taken a terrific beating because of heavy war duty. There is not a city or large municipality throughout the country that is not planning ambitious slum clearance projects; there will be a greater demand for residential housing than ever before, small and large residential units, repairs of old homes in cities as well as on farms.

"The American people are realistic

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• Here's a *factory-built* conveyor system that will fit your *custom-built* plant completely!

No special engineering. No delay for estimates on cost. No weeks of waiting for factory fabrication. Barber-Greene Conveyors are pre-engineered—pre-fabricated!

B-G Conveyors are built in a variety of sizes, forms and capacities to meet any material handling requirement . . . can be installed anywhere.

Erection costs? Your own workmen can install a B-G Conveyor system quickly, easily. Units arrive on the job conveniently marked. Factory assembled terminals and standardized units simplify and speed erection.

Barber-Greene Conveyors are *standardized*.

You can make additions and alterations rapidly . . . move it to a new location with 100% salvage. Factory assembly assures correct alignment in erection—reduces belt wear and maintenance expense. Write for Catalog 76. Barber-Greene Company, Aurora, Illinois.

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enough to realize that we must have dollar for dollar value, that investors must be encouraged and that we must take off our coats and go to work to liquidate our National debt. The American people also recognize that govern-

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DESIGNED
TO TAKE IT!
THAT'S A
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KNOW YOUR WELDING RODS
5 TOURNAWELD TYPES SERVE EVERY WELDING NEED
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• Four International TD-9 Trac-TracTors with Hough ½-cu. yd. tractor shovels are used by the Beyer Crushed Rock Company of Kansas City, Missouri, to load rock that goes to two big crushing plants. This equipment is not only used out in the open, but also for underground loading. Limestone rock is produced from several tunnels or mines one-fourth mile in length. The rock is crushed in sizes for various building and construction purposes and also as agricultural limestone.

ment controls are not needed in peacetime. The war is over. We must again consider the law of supply and demand, and act accordingly."

Bureau Resumes Work on Central Valley Project

The U. S. Bureau of Reclamation resumed construction work on the Central Valley Project following removal October 15 of all restrictions on men and material, acting Regional Director R. S. Calland stated.

The initial features of Central Valley Project are about one-half completed. Of an estimated total cost of these authorized initial features of $368,000,000, some $160,000,000 has been expended and $208,000,000 remains to be spent. Some $15,000,000 is available for immediate construction, and the Bureau will ask for an additional substantial sum in a pending deficiency bill to cover construction and other operations until July 1, 1946.

Work on the big Friant-Korn Canal's first 5.6 miles already is under way. Soon bits will be called for extending the canal to Kings River, about 30 miles from Friant Dam. The canal, destined to carry Millerton Lake water 160 miles to the water-shortage areas of Tulare and Kern counties, will cost $36,834,000 at 1945 prices.

Another job that will be started at an early date is completion of the Contra Costa Canal and the building of Mountain View dam and reservoir near Martinez. Although Contra Costa Canal has been functioning during the war by carrying water to the busy industrial towns and cities along Suisun Bay, it is still eight miles short of completion. An earthen dam and reservoir must also be constructed from which the city of Martinez will get a domestic water supply.

The power plants at Shasta and Koswick dams soon will have their full complement of generators. The three 25,000 kw generators at Koswick are being constructed now. One of the three big 75,000 kw generators that must be installed at Shasta is being built. The other two, which were loaned to Grand Coulee for the duration, soon will be on their way south.

The Delta-Mendota Canal and Delta Cross Channel are yet to be built. Funds are available for surveys and field work on the 120-mile Delta-Mendota Canal, and as soon as money is forthcoming rights of way will be secured along the San Joaquin Valley's West Side.

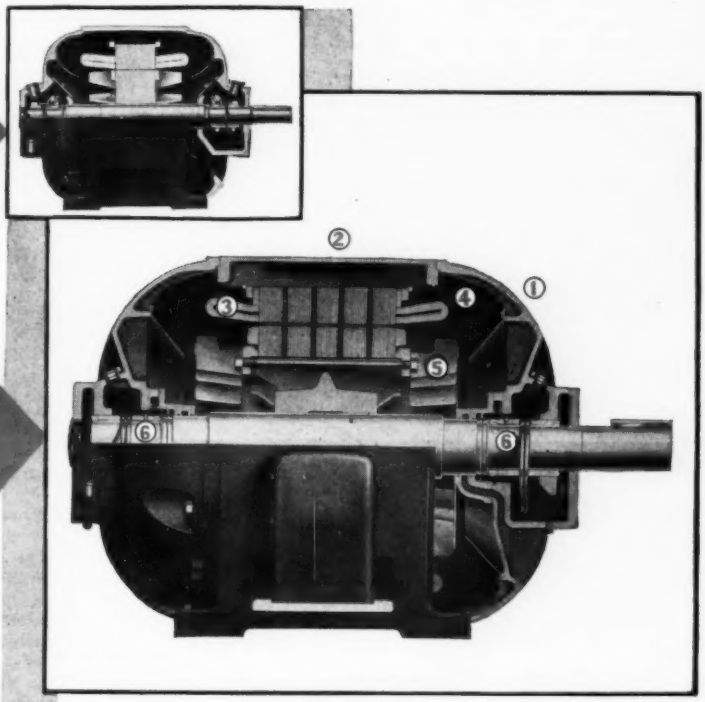
Decline in Production of Cement Continues in 1944

The decline in production and demand for cements, which began in 1943, continued through 1944. Total production of 92,152,399 barrels of hydraulic cements reported to the Bureau of Mines, United States Department of the Interior, was 32 per cent below the 1943 figure. This reduction results from respective decreases of 32 per cent in the output of portland cement and of a grouping of all other hydraulic cements (natural, masonry, puzzolan, and hydraulic lime). The portland-cement industry operated at 38 per cent and the "All other" group at 36 per cent of productive capacity in 1944. Mill shipments were 26 per cent below 1943 volume and totaled 95,592,155 barrels.

SAME STRONG POINTS OF CONSTRUCTION

from 1 hp

to 2000 hp



Now all your drives — large and small — can have standard G-E Tri-Clad induction motors with the famous protective features that guard against PHYSICAL DAMAGE, ELECTRICAL BREAKDOWN, OPERATING WEAR AND TEAR.

Tri-Clad, in its wide range of types and sizes (recently increased to 2000 hp), is G.E.'s most widely used (integral-hp) motor. For complete details on ratings, characteristics, and dimensions, write for Bulletin GEA-3580. *Apparatus Dept., General Electric Company, Schenectady 5, N. Y.*

HERE'S TODAY'S WIDER RANGE OF STANDARD SIZES	
Tri-Clad Type K (Low starting current, normal starting torque)	1 hp to 2000 hp at 1800 rpm
Tri-Clad Type KG (High starting torque, low starting current)	5 hp to 200 hp at 1800 rpm
Tri-Clad Type KR (High starting torque, high slip)	Available to 100 hp in speeds required for high-slip flywheel drive (punch press, etc.)

① Cast-iron frame and rigid, cast-iron end shields protect the motor from external blows and accidental abuse.

② Completely enclosed upper portion of frame guards against entry of falling objects and dripping liquids; keeps chips and the like from vital motor parts.

③ Windings of Formex* wire—one of the toughest magnet wires yet developed—resist heat aging, heat shock, and abrasion.

④ End windings are coated with Glyptal* varnish, providing a tough, hard finish that withstands moisture, oil, and abrasion.

⑤ Low-velocity, double-end ventilating system keeps the motor running cool and prolongs insulation life. One-piece, cast-aluminum rotor (used on all but the largest sizes), with integrally cast fans, is practically indestructible.

⑥ Bearings have extra capacity to take heavy shaft loadings from any direction. Lubrication is convenient, its effectiveness well proved.

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GENERAL ELECTRIC

Demand for portland cement and the group of all other hydraulic cements, as gaged by shipments, declined nearly one-fourth from 1943. Stocks of all hydraulic cements at mills on December 31, 1944, were 19,976,371 barrels or 15 per cent below the quantity on hand at the close of 1943. The average net mill realization per barrel of portland cement increased 2 cents over 1943 to $1.59 in 1944, whereas that for "All other hydraulic cements" dropped 4 cents to $1.24 in 1944.

Cement Production

District	Active plants 1943	Active plants 1944	Production Barrels 1943	Production Barrels 1944	Per cent change from 1943
Eastern Pa. and Md.	22	22	18,318,790	11,845,505	—35.3
N. Y. and Maine	12	12	6,595,271	4,180,453	—36.6
Ohio	9	9	6,412,566	3,911,337	—39.0
Western Pa. and W. Va.	8	8	5,013,348	2,699,134	—46.2
Michigan	10	9	6,246,291	5,218,620	—16.5
Illinois	4	4	4,682,139	3,154,196	—32.6
Ind., Ky. and Wis.	6	6	7,625,799	4,809,428	—36.9
Alabama	6	6	7,560,462	4,702,911	—37.8
Tennessee	6	6	4,774,089	3,852,618	—19.3
Va., Ga., Fla. and La.	6	6	6,526,172	4,625,911	—29.1
Iowa	5	5	4,569,899	3,383,082	—26.0
Eastern Mo., Minn., and So. Dak.	6	6	5,262,184	3,749,267	—28.8
Kansas	6	6	5,958,999	2,818,777	—52.7
Western Mo., Nebr., Okla. and Ark.	6	6	5,887,848	3,043,493	—48.3
Texas	10	10	9,580,199	6,136,052	—36.0
Colo., Wyo., Mont., Utah and Idaho	8	8	3,876,825	2,698,558	—30.4
California	12	13	18,468,169	14,650,600	—20.7
Oregon and Washington	9	9	5,086,788	4,403,320	—13.4
Puerto Rico	2	2	977,950	1,022,434	+4.5
	153	153	133,423,788	90,905,696	—31.9
Pennsylvania	25	25	19,793,533	12,338,720	—37.7
Missouri	5	5	4,781,744	3,478,053	—27.3

The decline in the long-term down trend of finished cement, which began in February 1943, continued at an accelerated rate through the first four months of 1944. Easement in the rate of decline began in May and continued through the remainder of the year. Monthly production of cement from January through August 1944 bore little resemblance to the usual peacetime seasonal pattern. Although the trend for January and February was similar to that of a normal period actual production was much greater. This increase is attributed to a larger than usual proportion of construction in the southern and far western states, where structural activity was not seriously curtailed by winter weather. During March-May the month-to-month increases in output were well below the customary seasonal rates of gain. However, in each month from May to August production increased over each preceding month in greater proportions than the usual seasonal pattern. From August to December the production trend followed the typical seasonal pattern. Peak 1944 production was reached in October. Monthly shipments in 1944 advanced from the January-February level of slightly more than five million barrels to 10,758,000 barrels in August, the largest monthly volume of the year. The volume fell off slightly through September and October and rapidly through November and December, reaching the lowest monthly quantity of the year in the latter month.

The declines in output and mill shipments of cement in 1944 were less severe than the falling-off in total construction activity, which was estimated on a value basis by the U. S. Department of Commerce to be 50 per cent below 1943. Contracts for engineering construction, as reported by the Engineering News-Record, were approximately one-third below 1943. Portland Cement Association data show that contracts were awarded in 1944 for 32,741,413 square yards of paving, a decline of 54 per cent from the 1943 total of 71,089,671 square yards. As reported by the War Production Board, construction work financed by public funds accounted for 61 per cent of the total construction in 1944 compared with 80 per cent in 1942 and 1943. The sharpest decrease in construction was in military establishments such as troop housing, airfields, and storage facilities.

Pennsylvania Plans to Extend Its Superhighway

Pennsylvania intends to extend its famed Harrisburg - Pittsburgh superhighway to Philadelphia or construct a modern multiple lane connecting link from the state capital to Philadelphia, according to announcement by Gov. Edward Martin.

The governor disclosed that the state had three plans to modernize the highway system from the eastern terminus of the Pennsylvania Turnpike at Middlesex, 16 miles from Harrisburg. He explained that studies have been made of the possibilities of a direct extension of the superhighway to Philadelphia; a new road from Middlesex to Lancaster to connect with the Lincoln Highway at the latter point, and development of a modern highway, using the present roadway of Route 322 to Downingtown and Philadelphia, with a cutoff at Paoli to the Southwest Airport or the proposed tunnel under the Delaware River.

Asserting that "we have the money and one of them will be done," Governor Martin said that during his administration the plans for the new road to

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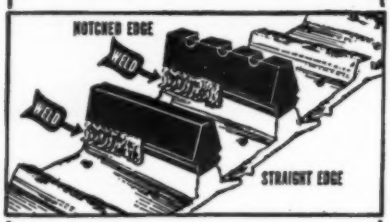

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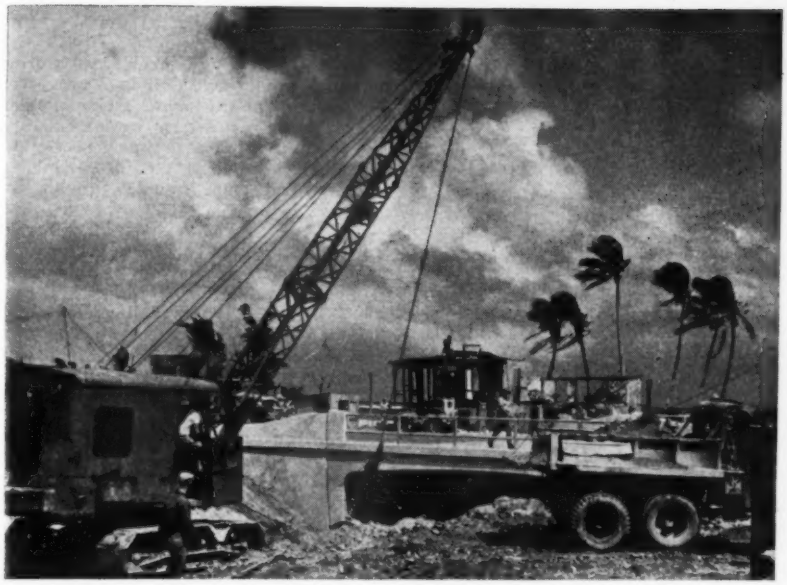

• **Drainage ditch on the Marianas is dug by this diesel-powered dragline.**
PAW Photo by Corsini

Philadelphia would be "at least well enough laid out" so that actual construction could be carried on when conditions permit.

When Pennsylvania's highway improvement program is completed, he declared, the state will have twice as much paved roadway as any other state, and "the finest road system in the world."

Governor Martin also discussed the possibility of extending the turnpike westward to the Ohio border and of improvements to make both densely populated and rural areas readily accessible to the motoring public. He denied a report that Pennsylvania was proceeding with the construction of a four-lane highway from Harrisburg to New York to the discrimination of Philadelphia.

Many Thousand Miles of Highways Still in Mud

America's highways and byways are still far from "out of the mud" Charles M. Upham, engineer-director of the American Road Builders' Association told a conference of highway officials in Washington, D. C.

"The public usually thinks of highways in terms of concrete, four-lane, limited access freeways and forgets the many thousands of miles of roads and streets that are unsurfaced. We have a big job ahead making these 'underprivileged' roads passable the year round," he said.

Insisting that mud and dust are still important highway problems especially in the rural areas, Upham announced that while 83% of the 563,520 miles of state-controlled highways were surfaced, only 73% of the 304,000 miles of municipal streets and alleys and 49% of the 1,928,000 miles of county and local roads have all-weather treatment. By surfacing is meant construction of concrete, asphalt and tar coating, gravel or stabilized earth.

"The figures I quote are from 1940, the year before America entered the war and the last year of general construction. Since then road building has been at a standstill except for access roads to munition plants and military establishments," Upham said.

"But no matter how good a road may be, it wears out in time, and that time is not very long in many cases," the engineer-director continued. Studies by the Public Roads Administration of the various types of surfaces show that the average life of soil roads is from 5-14 years; gravel or stone 6-13 years; bituminous surface treated 11-21 years; mixed bituminous 14-22 years; bituminous concrete 13-20 years; portland cement concrete 17-24 years and brick or block 19-21 years. Naturally such factors as the kind and volume of traffic, action of the weather, types of materials used, design, quality of construction and others enter into the deterioration and retirement of a highway.

Grand Coulee's Power Helped Speed Victory

Power equal to the work performed by 8,000,000 men laboring steadily for 10 years was turned out by Grand Coulee Dam during the war, the Bureau of Reclamation announced in telling how the world's greatest dam helped speed victory.

From the time that the first generator went into production on March 22, 1941, several months before Pearl Harbor, to the surrender of Japan on August 14, the power plant at Grand

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MAJOR savings result when Sauerman Scrapers and Slackline Cableways are used in pit excavation, strip mining, stockpiling and other material-handling jobs where the long working range of these machines can be employed to advantage.

With one man at the controls, and with a relatively small expenditure of power, a Sauerman machine will dig, haul and automatically dump a large hourly tonnage of any class of earth or bulk material. Moreover, the first cost of the equipment is moderate and upkeep is simple.

Tell us about your material-handling problems. If we think Sauerman equipment will meet your needs, we will offer suggestions and send you our catalog.

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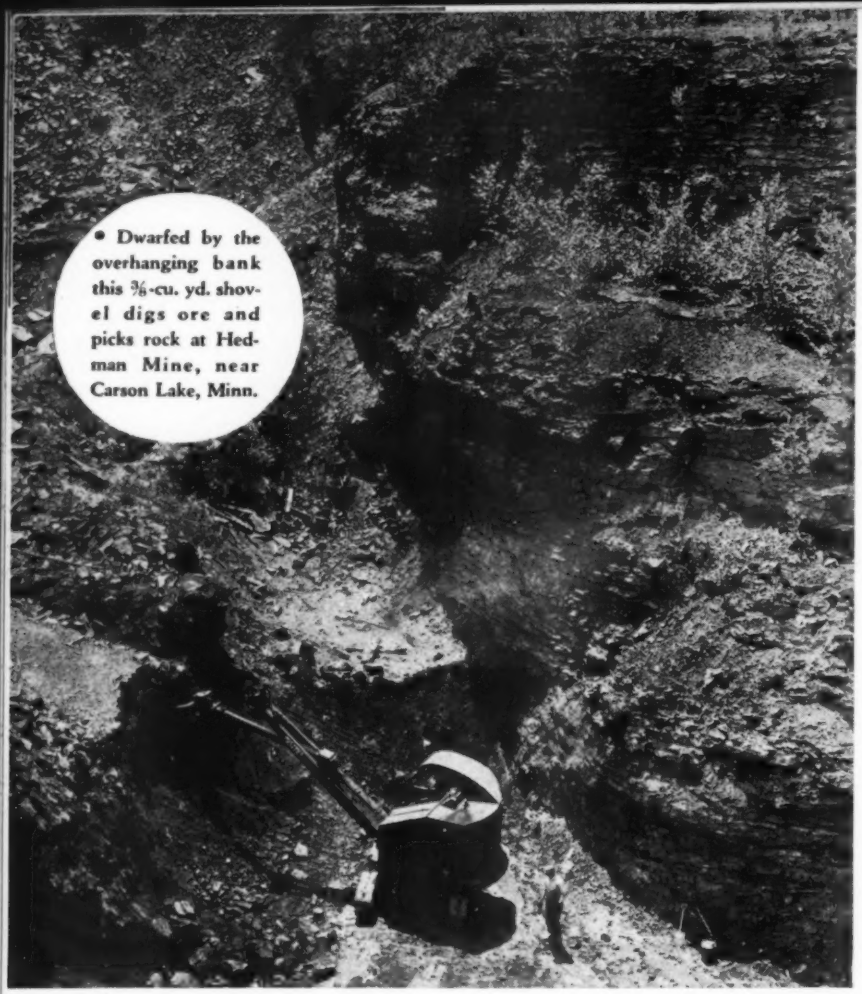

• Dwarfed by the overhanging bank this ⅜-cu. yd. shovel digs ore and picks rock at Hedman Mine, near Carson Lake, Minn.

Coulee Dam turned out 15,767,474,000 kilowatt-hours of energy, said Regional Director Frank A. Banks of Reclamation. Great blocks of this power went to the famed atomic bomb plant at Hanford, Wash.

Translated into weapons of war, this production of more than 15 billion kilowatt-hours would equal 38,000 fighter planes, nearly 25,000 heavy bombers, or 70 first-line battleships costing $80,000,000 each, Banks explained.

Resume Work on Brooklyn-Battery Tunnel in N. Y.

After receiving permission from the War Production Board to resume work on the $82,000,000 Brooklyn-Battery Tunnel, the New York City Tunnel Authority announced that the project should be under way again by December.

Linking Battery Park in Manhattan and Hamilton Ave. in Brooklyn, the tunnel will run 9,117 feet under the East River. President Roosevelt broke the ground for the first shaft in Brooklyn on Oct. 28, 1940, and it was scheduled for completion late in 1944. Construction was slowed when the WPB withdrew high priority ratings in December, 1941, and was halted by government order on Oct. 29, 1942.

When work was stopped, about 2,800 feet already had been dug from the Manhattan shore and about 1,200 feet from the Brooklyn shore. It was announced that by Nov. 1, contracts totaling $35,000,000 will have been advertised for completion of the project, which is expected by the fall of 1948.

William H. Friedman, secretary of the New York Tunnel Authority has said that 12,400,000 manhours of work remain to be done on the tunnel. More than 1,000 workers are expected to be employed soon after the project is resumed, with the total rising to about 3,500 within six months.

Construction Industry Ready For Peacetime Role

The construction industry is primed for its role as the instrument of employment for hundreds of thousands of skilled and unskilled workers being released from the armed services and war plants, it was declared by Thomas S. Holden, President of F. W. Dodge Corporation, fact-finding organization and marketing counselors for the industry.

Mr. Holden's statement was based on individual project reports from his corporation's field staff showing substantial gains in all major classifications of construction in July in the 37 states east of the Rocky Mountains, and on the release of wartime controls on industrial construction by the War Production Board.

"The industry demonstrated during the last full month of the war, even with the application of stringent controls over materials, equipment and manpower, that it is primed for its peacetime role as an instrument of widespread employment," Holden declared.

"With the removal of all controls, the industry will be able to move quickly toward the attainment of an average annual volume during the next decade exceeding 13 billion dollars at March 1945 price levels.

"There are reconversion problems, especially as regards manufactured articles used in construction, and some bottlenecks, such as the temporary scarcity of draftsmen, but they do not seem insurmountable to an industry which played a heroic part in supplying the nation in record time with the plants needed to win the war," Holden said.

The Dodge executive pointed out that construction contracts amounting to $257,691,000 were awarded in the 37 eastern states last month, an increase of 35 per cent over July of last year and 13 per cent more than in June of this year.

The most significant gains, Holden said, were in residential construction. For the first time this year, it registered a gain over the corresponding month of last year. The July total was $46,273,000, an increase of 79 per cent over July of last year.

The most pronounced residential gains were in single-family dwellings built for owners' occupancy, although other kinds of residential building also showed increases.

OBITUARY

ROY EMERY ROSS

Roy Emery Ross, 63, Eastern district manager of Bates & Rogers, heavy construction contracting firm, died Sept. 28 in Chicago of a heart ailment. His residence was in Westfield, N. J.

A native of Bloomington, Ill., Mr. Ross attended the University of Illinois. Associated for 43 years with Bates & Rogers, he started as a timekeeper and subsequently served as superintendent and general manager before becoming district manager.

Prominent as an expert on tunnel construction, Mr. Ross frequently was called on by railroads for advice. Years ago he and other veterans of tunnel excavation work organized the Moles, a group still active.

Before the war Mr. Ross maintained offices at 75 West St., New York. Recently he had been working out of the firm's Chicago office. The company engages in railroad, highway, tunnel, dam and other heavy construction jobs.

Surviving are his widow, Mrs. Georgia Murphy Ross, and three sons, John W., Roy Daniel and Robert E. Ross.

NOT in the Contract

Little Johnny brought home his report card, and with it was a note from the teacher.

"Dear Mrs. Jones," said the note, "Johnny is a bright boy but he spends all his time with the girls. I'm trying to think up a way to cure him."

Mrs. Jones studied the note, then wrote the teacher as follows:

"Dear Miss Smith: If you find a way to cure him, please let me know. I'm having the same trouble with his old man."

P.O.: "Chief, there's an applicant here who said he used to make his living by sticking his right arm into a lion's mouth."

C.P.O.: "What's his name?"

P.O.: "Lefty."

Jim: "Where did you get that date —buck teeth, cross-eyed, bow-legged and bleached hair?"

Joe: "You needn't whisper; she's deaf, too."

A very ravishing redhead went to a bachelor's apartment one night, and he gave her one of his half-dozen mink coats. She was relating this story to her girl friend the next day, who then asked:

"What did you have to do?"

The redhead never missed a beat in replying: "Just shorten the sleeves, that's all."

"Doan ferget, nigger, dat you married me fer better or wusser."

"Dat's all right, brown baby, but how come you-all keeps gittin wusser 'n' wusser?"

Gert: "I think that guy's a pain in the neck."

Bert: "Well, I have a lower opinion of him."

A soldier who had returned to civilian life wrote as follows to his officer: "Sir: After what I have suffered for the past two years it gives me great pleasure to tell you to go to hell."

In due course he received the following reply:

"Sir: Any suggestions or inquiries concerning movements of military personnel must be entered on form MF-3412, a copy of which is enclosed."

The drunk sitting at his favorite bar was startled when a horse entered the establishment and in clear, understandable English ordered two Martinis with two olives in each.

After the bartender had mixed 'em up, flipped two olives in each cocktail glass and poured 'em out, the horse swallowed his drinks in quick succession, paid his bill, said "Good afternoon, gentlemen," and walked out.

"Say," said the drunk, "isn't that a bit unusual?"

"No," replied the bartender, "I frequently put two olives in a Martini."

A young wife was visiting her soldier husband in a town near his camp. One night they were walking down the street when along came a curvacious blonde.

"Hi, Joe," said the blonde.

"Hi, Molly," said the soldier.

The suspicious wife nudged her husband. "Come on boy, give out. Who's that?"

"Don't bother me with that right now," he groaned. "I'm trying to think of some way to explain YOU to HER."

Office Boy: "Please, sir, I think you are wanted on the phone."

The Chief: "What do you mean, you think? Aren't you sure?"

Office Boy: "Well, the voice said: 'Hello, is that you, you old idiot?'"

Letter from a GI to his wife:

"Please send me $5 for shaving cream and stuff."

Came the reply:

"Honey, enclosed herewith is 25c for the shaving cream. The stuff is back here."

Normally "Japanning" means varnishing, but now the Yanks have changed it to "Shellacking."

A certain old lady had a recurring nightmare in which a young man pursued her with intentions obviously dishonorable.

She consulted a physician, told him about the dreams, and was given some medicine to make her sleep better.

In a few days she was back again.

"Now, now," said the doctor. "Don't tell me you still don't sleep well."

"Oh, no, it isn't that doctor. But to tell the truth, I certainly do miss that young man."

Barber: "Was your tie red when you came in?"

Customer: "No, it wasn't."

Barber: "Gosh!"

The Blood Collection Center was very busy, and as a nurse rushed out of the room with a container of freshly drawn blood she met a contractor who was a regular donor. They recognized each other and the nurse greeted the man brightly: "Just jump into bed, sir. I'll be with you in a minute."

"Saturday is hardly a satisfactory explanation of this, Westgate!"

New trade literature

Title: "Rodgers Portable Hydraulic Press"

Subject: Specifications, capacities, and other informative details of the Rodgers Portable Hydraulic Press are given in this new catalog. Also shown are illustrations of the versatility of the press. Other Rodgers equipment described in the catalog are shop presses, hooks and lugs for pulling, jacks, hydrostatic test units, power-operated hydraulic pump units, and pipe-straightening equipment.

Where to Get: Rodgers Hydraulic, Inc., St. Louis Park, Minneapolis 16, Minn. (Free)

Title: "Today It's Tracks and Rubber"

Subject: This booklet outlines the three zones of earthmoving: Zone 1 or power area; Zone 2 or slow speed hauling area, and Zone 3, or high speed hauling area. How the two types of tractors, track-type and wheel-type, adapt themselves to the varied problems of earthmoving, is told by words and many graphic photographs throughout the 12-page booklet.

Where to Get: Caterpillar Tractor Co., Peoria, Ill. (Free) Request Form 8995.

Titles: "Asarco Lead Fittings", "Asarco Expanded Lead-lined Steel Pipe", and "Asarco Lead Valves and Lead-lined Valves"

Subject: These bulletins tell of availability of these products and their uses, also describe in some cases, products which have never before been made.

Where to Get: American Smelting and Refining Co., 120 Broadway, New York 5, N. Y. (Free) State specific interest.

Title: "Canadian Mines Handbook"

Subject: The handbook reviews the position of operating mining companies in comprehensive detail, with five-year comparisons of output, earnings and other essential information. Particulars are given of the active non-producing organizations, including office addresses, transfer agents, directors, capitalization, property holdings and current activities.

Where to Get: Northern Miner Press, Ltd., 122 Richmond St. W., Toronto, Ontario, Canada. ($1.00)

Title: "Your Home for Tomorrow"

Subject: An unusual plan book containing drawings and plans for about 100 well-designed homes of various styles. Book is divided into three sections dealing with prize-winners, plans that have been previously published and built, and some details of set-ins, specialized storage units, cabinets, and departmentalized arrangements.

Where to Get: Industrial Publications, Inc., 59 E. Van Buren St., Chicago 5, Ill. ($1.50)

Title: "How to Plan the Home You Want"

Subject: A booklet designed specifically for consumers, telling them what to consider in planning their homes to provide greater convenience and livability. The booklet embodies the experience of thousands of people and is considered the best thing published on this subject.

Where to Get: Industrial Publications, Inc., 59 E. Van Buren St., Chicago 5, Ill. (25c)

Title: "Hot-Mix Asphaltic Concrete Paving"

Subject: In this manual there is published for the first time a complete text on the design of hot-mix asphaltic concrete paving and how any particular job mix is set up.

Where to Get: The Asphalt Institute, 801 Second Ave., New York 17, N. Y. (Free)

Title: "Coal-Coke Buckets"

Subject: New bulletin gives full details of an improved design grab bucket that digs or rehandles one pound of coal or coke for each pound of bucket weight. This bulletin will prove helpful to operators of bridge towers, cableways, cranes and other handling rigs who are seeking ways and means of increasing coal or coke tonnage handled at lower cost. Contains interesting illustrations as well as a chart of bucket load capacities, weights and dimensions.

Where to Get: The Hayward Company, 50 Church St., New York, N. Y. (Free)

Title: "Mines Register"

Subject: Standard reference guide covering development of mines, description of property, production, officers and directors, operating officials, equipment, financial operating statement, price range of securities, etc. Lists 22,000 active or dormant mines in all parts of the world.

Where to Get: Mines Register, 425 West 25th St., New York 1, N. Y. ($20.00)

Title: "Will Making Concrete Block Pay in Your Community?"

Subject: Bulletin discusses at considerable length the possibilities of establishing a profitable concrete block-making plant as a new business venture. An experimental study of an individual industry suited to small towns.

Where to Get: Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. (15c)

Title: "Pan-American Yearbook, 1945"

Subject: Practical, complete reference book of the Americas written from the American point of view. It gives detailed information on each of the 22 countries, over 25,000 names and addresses in inter-American trade, 53 maps of each country, of principal cities, latest statistics on imports and exports, detailed production data in every field and travel and transportation data.

Where to Get: The Macmillan Company, 60 Fifth Ave., New York 11, N. Y. ($5.00)

Notes from the manufacturers

Macwhyte Company, Kenosha, Wis., announces R. P. Tyler, general sales manager of the company, was elected to the board of directors to fill a vacancy caused by the resignation of Mrs. George S. Whyte.

Material Service Corporation, Chicago, has elected Henry Crown, former chairman of the board before entering service in the U. S. Army Corps of Engineers in 1942, to his former position upon his retirement from active military service.

Timken Roller Bearing Company, Canton, Ohio, has named L. H. Gegenheimer to his former position as sales engineer in the industrial division. He has returned to the company after a four-year leave of absence for war duties in Washington.

Osgood and General Excavator Cos. of Marion, Ohio, have appointed five new distributors: The General Machinery Co., Spokane, Wash.; American Equipment Corp., Harrisburg, Pa.; Carl R. Miller Tractor Co., Des Moines, Iowa; J. S. Innes, Ltd., Leaside, Ontario, Canada, and Udo Riedel, Rio de Janeiro and Sao Paulo, Brazil, S. A.

Athey Truss Wheel Co., of Chicago, Ill., announces a change in name to Athey Products Corporation.

National Highway Users Conference, Washington, D. C., has named Louis E. Mesam public information director.

C. S. Johnson Co., Champaign, Ill., announces the appointment of J. H. Heintz as general sales manager.

Buffalo-Springfield Roller Company, Springfield, Ohio, has named W. J. Hazeltine, former vice president in charge of distribution, general sales manager.

Davey Compressor Co., Kent, Ohio, has appointed Clearview Equipment & Mfg. Co. sales and service dealer for the St. Louis territory.

Provo River Irrigation

(Continued from page 611)

replaced. Steel forms were impossible to obtain and the contractor designed his own forms and built them of wood in the job carpenter shop and then faced them with sheet steel when this material became available. The most successful and efficiently built inside forms were made with 2x12 lumber for ribs and 1x6 sheathing providing a base for the steel sheets. The segments for the outside forms are all cut from 2x12x12 with 1x6 sheathing providing the base for plywood.

The best four-man crew has been able to change a form and pour in 16 hours. Each barrel is reinforced with transverse steel hoops, and contains 28 cu. yds. of concrete, has a minimum wall of 11 inches, 25 ft. long and eight ft. in diameter.

Tamping Concrete

Three Mall and one Master v-belt gasoline engine-driven flexible shaft vibrators are used to tamp the concrete as it is poured into the form from the excavator concrete bucket. To keep down the water additional small capacity pumps were located at strategic points around the form to be poured. For this purpose one three-inch, two two-inch and two 1½-inch gasoline-driven centrifugal pumps were used in addition to two eight and two four-inch pumps.

Some pours were made at the rate of a cu. yd. every two minutes. Concrete was transported from the Noble automatic plant to the job in three trucks equipped with Smith four-cu. yd. transit mixers. Under this setup as many as seven barrels were poured in five days.

Regular runs of the siphon will be covered with a minimum of three feet of backfill after testing and curing time of 28 days has elapsed.

Exposed concrete surfaces are required to be protected from the direct rays of the sun for the first three days and kept continually moist for at least two weeks after the forms are removed. Considering the amount of water to be handled in order to have an invert dry enough to pour, Walkers accomplished much, but it was man against time and the elements. The contractor is doing everything possible to complete the job before cold weather which would require use of heated water in concrete mixes and protection for the concrete placed.

In excavating some locations there was no place to dump excavated material and it was necessary to truck the spoil to a suitable location and then truck it back to use for backfill.

Besides excavation for the siphon barrels there was excavation for inlet and outlet structures, blow-offs, vent structures, turnouts, pump line inlets and an overhead river crossing structure and a river channel change adjacent to the Olmsted siphon and the American Fork Creek wasteway channel, all in unstable ground, where it is necessary to vary the slopes.

• LeTourneau 30-cu. yd. scraper working on eight-inch cut. Sheepsfoot roller compacts fill at extreme right.

Standard Siphon Excavation

Standard excavation for the siphon barrels, or allowable pay excavation where no variance of slopes was required, was laterally two feet from the junction of the two to one slope on the bottom and outside of the sidewall and to slopes of 1 to 1 for common excavation and ¼ to 1 for rock excavation. This was mostly accomplished with dragline equipment, using one or all three machines. Where siphons crossed roadways temporary crossings had to be provided.

J. B. and R. E. Walker, Inc. are planning to put another Bucyrus-Erie machine, a 22-B ¾-cu. yd., on the job. Because of the great amount of moving involved compared with the actual yardage excavated, it has been found that this type of machine is much more effective for the work than a larger machine would be.

The Bureau of Reclamation now has a construction department of its own in this section. Getting equipment whenever and wherever it can find it they now have three draglines, two Northwests and one Bay City. E. O. Larsen is regional director and construction engineer. L. R. Dunkley is resident engineer and acting engineer, C. J. Sherry, supervising engineer and C. G. Bargeron, is office engineer at the Provo, Utah, office of the Bureau of Reclamation.

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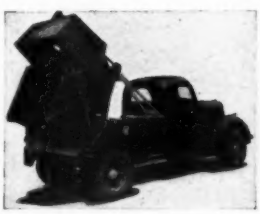
Brooks Load Lugger

For Handling Materials



Enclosed Type Container may be used handling refuse or wet materials.

Here's new speed and efficiency in moving materials on hand loading jobs. Mount a Load Lugger on any standard truck chassis and use 5 to 10 dump buckets. It cuts costs in quarry operations, stripping overburden, road building, excavating and other jobs. Ask for Catalog.

TrucKrane Boom Attachment may be used for lifting or placing pipe, steel or timbers.

311 Davenport Road, Knoxville 8, Tenn.

Distributors in all Principal Cities

Brooks EQUIPMENT AND MFG. CO.

TO ADVERTISE: All advertising in this section is payable in advance. Rate: 60c per line, or $7.20 per inch of 12 lines. Minimum charge $2.40. No discounts; no commissions. If no change in copy is desired, three continuous insertions are offered for the price of two. Read these instructions carefully. Each line contains 41 characters (34 characters if all capital letters are used). Count spaces and punctuation as one character each. Allow 10 characters for box number, if blind advertisement is desired. Count your own copy to save delay. Be sure to enclose the correct amount of money with your order. Closing date—15th of preceding month. Example: January issue closes December 15th.

TO INQUIRE: Be sure to address your inquiry to the advertiser by using the correct box number. Mail your letter in care of Excavating Engineer, South Milwaukee, Wisconsin. Write each advertiser a separate letter. Do not write us for name and address of advertiser. This information will not be given out. We have no information about the equipment advertised other than that shown in the advertisements themselves.

One Thew Type O, center drive, continuous tread power shovel, equipped with 40 ft. boom, ¾-yd. clamshell bucket. ¾-yd. dipper, part of unit available, now detached. Entire unit in excellent condition.

The Logan-Long Co.,
Franklin, Warren Co., Ohio

One Bucyrus 31-B high lift steam shovel, Serial Number 4797. One Williams patent crusher and one No. 5 Jr. Jumbo crusher. One traveling apron, heavy-duty feeder, for above hammer mill. Box 3130

1½ yd. gas shovel priced at $8250. f.o.b. Loco. cranes—12½ to 40 ton. Special bargain in good 22 ton, 50' bm., new boiler 1938. Diesel and gas locomotives, 30 ton and smaller. 150 HP AC electric drag scraper hoist. 75 HP AC 3 drum electric hoist, like new. 950' Compressor cpld. to Syn. Motor. Guaranteed.

James Wood, 53 West Jackson, Chicago 4, Ill.

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2 Buda MAN diesel engines complete with clutches and radiators size 6½" x 8¾". One Waukesha gas engine 6 MK-124A. One Kohler electric plant 8 KW. 115 or 230 Volts, single phase, 60 cycle. 1½ and 2-yd. backhoe buckets. Parts for No. 10 gas Caterpillar motor patrol. Large stock of diesel and gas Caterpillar heads. Bulldozer blades of all kinds. Inquiries solicited for A.C. Cletracs, International & Caterpillar parts. **Write SAM, 897 Adamson St., S.W., Atlanta, Georgia.**

FOR SALE
SHASTA DAM SAND AND GRAVEL PLANT EQUIPMENT

Including

GOODYEAR 9-MILE-HAUL 36" SPECIAL CONVEYOR BELTING
32,000' of Belt Remaining
With Idlers, Pulleys, and Drives

Also

Electric Motors, Line Equipment, Transformers, and Supplies
Pendulum Boom Belt Conveyors, 100' and 200'
Merrick Feedoweights and Weightometers
Dorr Hydroseparator, 20'x4'
Marcy Rod Mill, 8'x12'
Vibrating Screens
Dorr Rake and Bowl Classifiers
Extra-heavy Gravel Washer, Trommel type
Pumps: Centrifugal, Deep-well, Steam, Dredge
Auxiliary Equipment: Chain Hoists, Winches, Welding Machines, etc.

Subject to Prior Sale.

Write, Wire, Telephone Redding 1440

COLUMBIA CONSTRUCTION COMPANY, Inc.
Box 579 Redding, California

FOR SALE
Dragline Bucket
1—3-cu. yd. Type AY Heavy Duty Bucyrus-Erie Dragline Bucket
Box 626 Emporia, Kansas

1¼-yd. front end loader.
1¼-yd. shovel dragline combination; and 2-yd. dragline. Box 3128

1—50-B Atlas Imperial diesel shovel with 2 shovel booms and 2 dippers.
1—60-ft. dragline boom for same.
1—2-yd. dragline bucket.
1—Gas-air dragline. Requires new motor. Cats just repaired.
1—Shovel boom and dipper for same.

FOLEY BROTHERS, Inc.
Wausau Wisconsin

¾-yard Kiesler Model "H" clamshell bucket. Serial No. 635-2657. Excellent condition. Located Texas. Box 3120

1—60 Caterpillar tractor with LeTourneau bulldozer
1—10-ft. Adams grader (leaning wheel)
1—2-yd. Michigan Tumblebug
1—Barber-Greene loader
1—Eagle truck mounted loader
1—Cletrac crawler with end loader
1—½-yd. Speeder crane with dragline; complete with boom and bucket.

Weldon Laurence
Prophetstown, Illinois Phone 63

One 4-yd. type "AX" Bucyrus-Erie dragline bucket, complete with all fittings. Has been used about 45 days. Price $1695. Box 3126

MECHANICS step up your own skill with the facts and figures of your trade. Audels Mechanics Guides contain Practical Inside Trade Information in a handy form. Fully Illustrated and Easy to Understand. Highly Endorsed. Check the book you want for 7 days' Free Examination. Send No Money. Nothing to pay postman. ( ) Marine $4, ( ) Blueprint $2, ( ) Machinist $4, ( ) Electricity $4, ( ) Shipfitter $1, ( ) Welders $1, ( ) Radio $4, ( ) Plumbers $4, ( ) Diesel $1, ( ) Carpenters $6, ( ) Mathematics $2, ( ) Auto $4, ( ) Sheet Metal $1. If satisfied you pay only $1 a month until purchase price is paid. AUDEL, Publishers, 49 West 23rd St., New York 10, N. Y.

SURPLUS DIPPERS FOR BUCYRUS-ERIE SHOVELS

2—⅜ cu. yd. Skimmer Scoop Dipper—10-B.
2—½ cu. yd. Drag Shovel Dipper—17-B.
3—½ cu. yd. Skimmer Scoop Dipper—17-B.
1—¾ cu. yd. Welded Dipper—21-B.
1—1¼ cu. yd. Drag Shovel Dipper—33-B.
1—1½ cu. yd. Heavy Duty All Cast Dipper—42-B.
1—1½ cu. yd. type 4 Med. Duty Dipper.
1—2 cu. yd. Rock Dipper—75-B.
1—2¼ cu. yd. Inserted Type Dipper—50-B.
1—2¼ cu. yd. Inserted Type—55-B.
1—2½ cu. yd. All Cast Dipper—55-B.
1—3½ cu. yd. Coal Loading Dipper—75-B.
1—4 cu. yd. Type IV Medium Duty Dipper—100-B.

F.O.B. Works

Write for any further information desired.

BUCYRUS-ERIE COMPANY
Parts Department
South Milwaukee Wisconsin

Northwest No. 4 rope crowd shovel front, 20' boom, 17' 6" handle, 1-yd. dipper. Condition very good. Location Cocoa, Florida. Box 3124

One shovel boom and ¾ cubic yard bucket complete for Lorain 40. Cable crowd shovel. Priced right for quick sale. Box 3121

Dragline boom, bucket, and attachments for Erie B-2 steam shovel. Box 3123

Wanted: ¾-yd. or 1-yd. shovel. Box 3129

Speeder combination loader or shovel on RD-6 Caterpillar tractor.

Dierks Lumber & Coal Co.—Dept. LG
1006 Grand Avenue Kansas City, 6, Mo.

TRAILER

Rogers Lowbed trailer for carrying excavating equipment. Approx. 30 tons capacity. State all dimensions and details. Robert Hawthorne, 1701 North Second St., Philadelphia, Pennsylvania.